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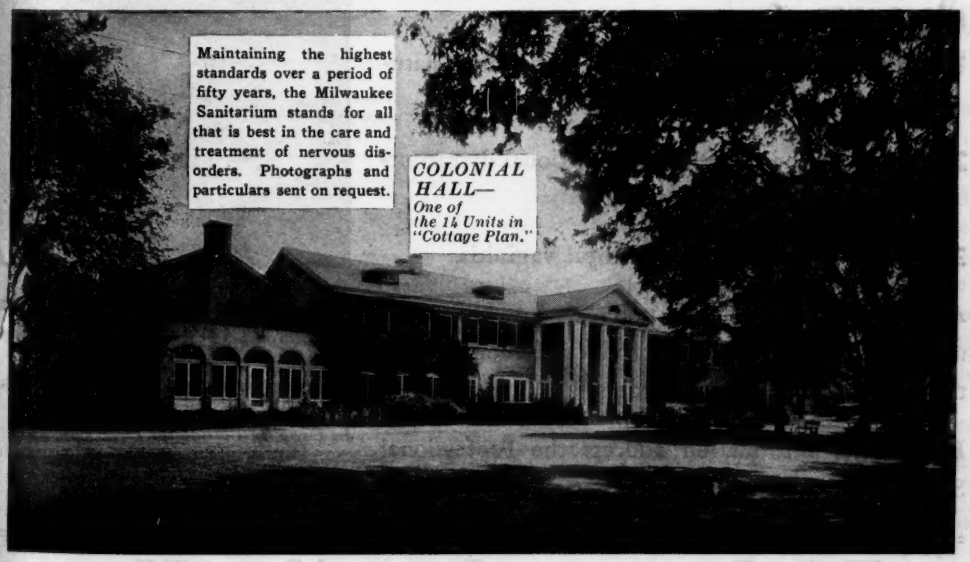
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ILLINOIS MEDICAL JOURNAL

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Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

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Editorials

BUREAUCRACY BECOMING BREAKFAST CAUSERIE—PEOPLE AWAKENING TO DANGERS AT WASHINGTON

Since the ILLINOIS MEDICAL JOURNAL has been crusading for years against the increasing bureaucracy at Washington, and has had its javelins out against the medico-politico hordes that have been bait for the bureaucrats, it is gratifying to note that the menace against which these columns have railed for so long now has bared itself to the whole world in such shocking fashion that bureaucracy and its venoms become not only a breakfast table causerie but luncheon logic and dinner table debate.

When a polished aristocrat and tried diplomat such as Richard Washburn Child fills the columns of the coast-to-coast and boundary-to-boundary newspaper chain of William Randolph Hearst with warnings against this sad and sordid over-centralization at the capitol then truly is the tenet of this journal upheld. Among other elucidations from the pen of Mr. Child was that written under date of Jan. 17 and which read in part as follows:

"Bureaucracy!

"This is a word heard more and more often in the office buildings and cloak rooms of this Congress.

"Already, it is being noted, we have approximately three-quarters of a million federal employes and there will be more, not less. When the government engages in the business of taking over control, regulation and oversight of our economic and social life no matter how much sympathy you have for it you have to face this fact.

"THE MILLION PERSONALITIES NEEDED TO RUN THE COUNTRY ARE NOT A MILLION FRANKLIN ROOSEVELTS.

"Roosevelt knows it and is learning it.

"Congress is awake to it.

"The word 'bureaucracy' may not be pleasant,

but on Capitol Hill that word is being passed around.

"Harding, Coolidge and Hoover all tried to cut out duplication, tried to replace quantity of bureaucracy with quality and efficiency. But still bureaucracy even before the new deal gave so much to government to do, not only resisted the lawnmower but grew like a weed.

"'It is not the expense of the thing which need worry us as much as the creation of a system by which it may take half the people of the United States to regulate the other half. It is not so much the fear of the rising cost of government as it is the fear of meddling, interfering, questionnaire-spreading, snooping, autocratic, inefficiency,' said one senator to a group.

"It is not so much the drain upon the taxpayers' pocket as the multiplying of dangers of corruption, of intrigue, and popping-jay control of those who know their business by others who know next to nothing about the business.

"Members of Congress who are familiar with the red-tape, the petty corruption, and the political entrenchment of European bureaucracies today are shuddering somewhat at the possible menace of such a growth in our own federal system. They will be heard during this session.

"When it was announced that the controller general, McCarl, had declared unconstitutional the plan for the government to go into landlordism, through the housing corporation, the discussion arose again.

"Criticism of the new deal has no part in the apprehension. Commonly it is said about growing bureaucracy: 'Let us have quality rather than quantity.' We may not be able to find seven hundred thousand Franklin Roosevelts, but let us have fewer and better imitations of such an administrator as he.

"Experience shows that once a bureau is set up its tenacity is astounding because so much political influence falls in behind it.

"Experience has shown that the more men there are in government, the less efficiency and the more corruption and scandal.

"What the President may well consider is that legislation may be all right, intent may be all right, the designs may be all right.

"ADMINISTRATION IS THE GREATEST DANGER OF ALL.

"The million men thought to be needed will not all turn out to be in the President's class and it is difficult to be rid of those who are not."

FEDERAL EMPLOYES COMPENSATION ACT BEARS ALL THE EARMARKS OF ABSOLUTE CAPACITY FOR ULTIMATE TRANSMUTATION OF INDEPENDENT SCIENTIFIC AND MEDICAL PRACTICE INTO A FUNCTION OF GOVERNMENTAL BUREAUCRACY

The alchemist's stone for the propagandists of the socialization of medicine would seem to have been found at last in the ramifications of the new "Federal Employes Compensation Act." This legislation bears all the ear-marks of absolute capacity for ultimate even if gradual transmutation of independent and scientific medical practice into a function of governmental bureaucracy.

Some persons never learn!

The eighteenth amendment is no sooner out of the way, than "Pop! goes the Weasel" for another great and debatable human experiment.

While the whole world howls in revolt against bureaucratic tactics and their attendant, necessitous, sustained high tax rates, the United States tax-payer finds himself saddled with another old man of the sea in this would-be altruistic dispensing of medical care to the employees of the Federal Civil Works Administration.

Instructions issued by the United States Compensation Commission relative to the hospitalization and general casualty coverage of the Federal Employes Compensation Act to the tune of over 4,000,000 persons is written in letters of fire to those capable of understaiding the inscription upon the wall. "Mene, Mene, tekel upharsin" has been written again and again in warning since the days of Babylon if those who run will read.

By the mechanism of this fresh phase of governmental activity every man and woman sustaining injury or occupational disease in the performance of duty is entitled *to medical and hospital service at government expense.*

FURTHER FOR DISABILITY OR DEATH RESULTING FROM SUCH INJURIES AND DISEASES? THEY OR THEIR SURVIV-

ING DEPENDENTS ARE ENTITLED TO COMPENSATION.

Now as the government has no money, no income, no revenue other than that obtained by tax levies upon the citizens, this generosity by a bunch of bureaucrats at the expense of you and of me and of our neighbor is highly interesting.

Especially is this true in the face of the fact that this army of employees has been hired and put to work without medical examination or approval, and further, many of these new employees are working in fields of endeavor both foreign and untried and often antagonistic to say the least to their previous labors.

We all know the results of the emergency measure that was prohibition.

Here is another emergency measure, and one that from the inside looks to carry in its train as much woe as did prohibition itself.

For the last twenty-five years socialists and communists have been attempting to make of ethical medicine the catspaw for pulling chestnuts galore from the fire. Only the alertness of the medical fraternity has prevented the practice of medicine from being the opening wedge by which socialism and communism might overthrow the very foundation of the nation. Now the possibilities of the current "emergency" are so far reaching and so innately sinister that both the probabilities and the possibilities of the affair demand serious consideration from the medical profession.

Many things are being done in the present crisis that would never be tolerated even in the council chamber of normal times without extending hearings, referendums and the like by the population at large as well as by the profession and organizations concerned.

As Patrick Henry, hero patriot, remarked:

"I can judge of the future only by the past."

The log of the years as set forth by history, both written and handed down by word of mouth, shows that measures introduced by governments during an emergency not only develop bureaucrats to make effective these emergency measures but, in a vicious circle, tend to attain perpetuation at the hands of these very bureaucrats that have been developed by these emergency measures.

This is the strongest finger that bureaucracy has yet managed to stick into the pockets and the public welfare of the United States citizenry.

To the man up a tree it looks as if propagandists for communistic medicine had found in "The Federal Employees Compensation Act" their right of way both for the complete socialization of medicine but for the laying of a stout foundation stone for the pyramiding of a taut bureaucracy, not the least of the ramifications of which will be the ultimate socialization not only of the science of medicine but of the very soul and substance of our national democracy.

To offset this menace the physician has but one counter irritant, defense in mass formation —that is, by a perfected group union. Both the educative and the punitive force of medical organization through lay instruction and through political results are well within the scope of a loyal and harmoniously functioning national medical organization of which the strength as a whole will be gauged by the power of its units, from the blanket society to the smallest unit in the most sparsely setttled districts of the country. Medicine must not be socialized.

THE MILBANK MEMORIAL FUND DIRECTORS ADMIT HAVING FALLEN DOWN ON THEIR SELF APPOINTED JOB OF WORKING OUT A SYSTEM OF SOCIALIZED MEDICINE

Well! Well!

Joshua commanded the sun and the moon to stand still and got by with it but—the *social* system is less obedient than its *Solar* Sister!

The Milbank Memorial Fund with its large contributions to the Committee on the Costs of Medical Care admits having fallen down in its self-appointed job of working out a system of socialized medicine.

Which might well put into the mouths of physicians all over the United States the familiar chant of

"Weep not for us, oh, ye daughters of Jerusalem, but, oh,
Weep for yourselves!"

Only—and doctor, bear this in mind—neither the Committee on the Costs of Medical Care nor the Milbank Memorial Fund has as yet lost heart in its dubious ambition no matter how much good cash, that deserved a better spending, has been wasted upon such conduits.

Quite candidly the annual report of the Mil-

bank Memorial Fund couches in elaborate language and with ornate statistics the age old axiom, "While there's life there's hope," and connotes that the medical profession is not dead yet, nor socialized and that the Memorial Funds and the Committees can keep right along on their self-charted courses.

The Milbankers are even taking heart of the depression, and trying to conjure this sad state of affairs economic into a level to so humble the proud physicians that they will thank God for the Milbankers and the Memorials and their Funded Ideas!

Now, boys, what price Chagrin?

Apropos of socialism and the Milbank report lend your eyes to this: "The need for such a national plan," says the report, "has long been felt. It seems now that the time has come when it should be formulated and put into action." *With this result in mind the Fund advanced its money grants to the Wilbur Committee, that really "didn't put it across!"*

Loud among the plaints of the Milbank crowd is that medical care is not properly distributed. The primary consideration having to do with the proper distribution of goods and wealth does not harass them at all. Essentially, are they not tied up with the discredited laissez faire policy: exploit the people and then draft the medical profession to take care of the wretched human by-products?

An ironical phase is that so many business men of the reform-the-medical-profession type helped to bring about the depression because of the breakdown of their own distributive methods.

When sick industrialist adopt a code of the ethical significance of the Hippocratic code, there will be no need to talk about the socialization racket.

Dr. J. Bentley Squier has said that "Most medical men devote at least one-half of their entire time to the unremunerative care of the poor and only a part of their time for their own financial benefit. Perhaps the business order will think this over and adopt some such code for itself."

Meanwhile the commercial reformers of medicine might take to heart a bit of scripture and so "cast from thine own eye the beam ere thou consider the mote in thy neighbors."

HERE ARE THE BUREAUCRATIC ORDERS OF THE FEDERAL CIVIL WORKS ADMINISTRATION RELATIVE TO HOSPITALS IN COMPENSATION CASES ARISING OUT OF INJURIES

The following instructions have been issued by the United States Compensation Commission, relative to the hospitalization of employees of the Federal Civil Works Administration:

Please instruct each local administrator in your state as follows:

1. Employees of the Civil Works Administration who suffer injuries while in the performance of duty are entitled to necessary hospital care for the treatment of conditions due to such injuries. An injured employee shall be admitted to and retained in a hospital only as long as hospitalization is necessary for the purposes of treatment or examination. The instructions herein prescribe the procedure to be followed in selecting hospitals for the treatment of these cases and the schedule attached shows the rates to be allowed for hospital care. In no event, however, should these instructions be construed so as to interfere with the prompt and adequate care of an injured employee.

2. Injured employees must be referred to federal hospitals when such hospitals are both available and adequate. It is not intended to utilize these governmental facilities for civil works employees to the disadvantage of other classes of beneficiaries that may be entitled to care in federal hospitals, but that beneficiaries for whom the respective federal hospitals were primarily established shall have preference in the use of such hospitals. However, maximum use should be made of any existing federal medical facilities that may be available.

3. (*a*) When federal hospital facilities are not available or adequate, cases requiring immediate hospital care shall be sent to the nearest suitable hospital which desires to participate in the service at the rates specified in the approved schedule of rates. Public hospitals, other than federal, are not to be given preference.

(*b*) The following factors should be considered in determining suitability: the proximity of the hospital, type of service, e. g., whether the hospital is well qualified to handle the special type of case, and the general quality of service.

(*c*) You should secure advice as to the suit-

ability of local hospitals from one or more of the following local sources: medical advisory councils which may already be set up under Rules and Regulations No. 7, of the Federal Emergency Relief Administration; hospital associations; hospital, health or similar councils; county medical societies; boards of public welfare or health.

4. (*a*) All hospital care must be authorized in writing by the proper officials on the staff of the local Civil Works Administrator. Care of emergency cases should not be delayed for a written authorization, but this must be furnished within forty-eight hours after admittance to a hospital.

(*b*) An authorized physician in charge of the treatment of an injured employee as a compensation patient, when hospital care is required, may send the patient to a hospital of the physician's selection provided the hospital thus selected agrees to the approved schedule of rates. However, hospitalization in such cases must be approved in writing as provided in paragraph 4 (*a*).

5. The Commission reserves the right to have its medical representatives examine patients at the hospital and examine the records of these patients and to cause the patient's removal when the Commission considers it necessary in the interest of the patient or to prevent overcharge, or for other sufficient reason. Hospital records of these patients shall be open to inspection by representatives of the Commission.

6. The Commission, in conference with representatives of the national hospital associations, has agreed on a basic rate for the care of injured Civil Works Administration employees in general hospitals, exclusive of federal hospitals. This rate includes many items for which extra charges are usually made. A schedule of rates for other services which are not included in the basic rate has also been agreed to. The national hospital associations have agreed to notify their members of these approved rates and urge their full cooperation with the Commission. The approved schedule of rates is attached hereto. Charges for services previously rendered will be adjusted under this schedule. (See paragraphs 34 and 35 of Civil Works Administration Rules and Regulations No. 5 for instructions concerning submission of vouchers.)

7. Each local administrator must make adequate provisions for the transportation of seriously injured employees to obtain medical treatment, by arrangements made in advance for each work project. This may be done by arrangements for the use of automobiles available at the project, by agreement concerning the use of local ambulance services or such other arrangements as may be feasible. Ambulance service provided by hospitals is covered in the approved schedule of rates.

U. S. Employees' Compensation Commission.

SCHEDULE OF HOSPITAL FEES AGREED UPON BETWEEN THE JOINT COMMITTEE OF THE AMERICAN, CATHOLIC AND PROTESTANT HOSPITAL ASSOCIATIONS, THE CIVIL WORKS ADMINISTRATION AND THE U. S. EMPLOYEES' COMPENSATION COMMISSION

A $3.50 per diem rate for all hospital cases of injured employees of the Civil Works Administration will be general throughout the United States, regardless of local hospital costs or charges. This rate will apply in general hospitals, exclusive of federal.

The following items will be included in the rate:

The use of a single room when necessary
General medical and surgical care by the house staff
Ordinary nursing

Special diets	Usual medicines

Usual dressings and surgical supplies
Usual laboratory tests, such as

Blood counts	Hypodermoclysis
Smears	Coagulation time
Usual urine tests	Hemoglobin estimation
Wassermann tests	Occult blood
Precipitation tests for syphilis	Skin tuberculin tests
Widal tests	Spinal fluid smears and cell counts
Agglutination tests	
Blood typing	Sputum examinations for tubercle bacillus
Material for plaster casts	
Colonic irrigations	Other usual bacteriologic tests

Such physical therapy treatments as may be necessary for patients in the hospital
Autopsies and reports of same when a patient dies in the hospital

Such physical therapy treatments as may be necessary for patients in the hospital.

Autopsies and reports of same when a patient dies in the hospital.

There will be no charge for medical or hospital reports unless an actual transcript of the hospital record is requested, in which case charge for same will be made in accordance with the local public stenographers' rates.

Charges will be allowed for the day of admission, but not for the day of discharge or death.

In addition to the foregoing rate it will be permissible to make the following extra charges

1. An operating room fee of $5 for a minor operation and $10 for a major operation. A general anesthesia fee of $5 for a minor operation and $10 for a major operation, to include anesthetic service by a salaried employee of the hospital and the cost of the anesthetic.

2. Laboratory examinations of an unusual character, such as complete blood chemistry, gastric analyses, etc., may be charged for at a rate of from $3 to $5, according to the nature of the examination (which must be specified in the voucher submitted), $3 being the usual charge allowed for such examinations and reports.

3. Fee for special nursing when necessary will be allowed in accordance with the local prevailing rate or when furnished by a salaried employee of the hospital, at actual cost.

4. X-ray examination will be paid for in accordance with the following rate, the number of films and procedure for each fee being indicated by the description below:

	No. of Films	Price
Ankle joint, anteroposterior and lateral views..	2	$ 2.50
Arm, humerus, anteroposterior and lateral views	2	2.50
Bladder, with injection, anteroposterior views..	1	5.00
Chest, for pulmonary or cardiac diagnosis, plain	1	3.75
Chest, for pulmonary or cardiac diagnosis, stereoscopic	2	5.00
Clavicle, postero-anterior view	1	2.50
Elbow, anteroposterior and lateral views	2	2.50
Fluoroscopy, when required, without film	1	1.00
Foot, anteroposterior and lateral views	2	2.50
Forearm, radius and ulna, anteroposterior and lateral	2	2.50
Foreign body in eye, location of (the fragment charted in three planes and its dimensions ascertained by the method of Sweet or equivalent as needed)	..	12.50
Gallbladder, Graham technic, including cost of dye	1	10.00
Gastro-intestinal tract, complete x-ray study, including fluoroscopy, as needed	..	12.50
Hand, anteroposterior and lateral views	2	2.50
Hip joint, plain, anteroposterior view	1	3.75
Hip joint, stereoscopic, anteroposterior view	2	5.00
Intestine, barium clysma, 14 by 17 films for position and outline, as needed	..	7.50
Jaw, upper or lower	1	2.50
Kidneys, right and left, for comparison, 11 by 14 films, as needed	..	5.00
Knee joint, anteroposterior and lateral views	2	2.50
Leg, tibia and fibula, anteroposterior and lateral views	2	2.50
Iodized poppy-seed oil injection for bronchiectasis, etc., including roentgenograms and interpretation, as needed	..	12.50
Pelvis, 14 by 17, single film, anteroposterior view	1	5.00
Pyelography, using iopax or similar preparation (including cost of drug)	4	10.00
Ribs, plain view over suspected area, 10 by 12 film	1	3.75
Scapula	1	2.50
Shoulder joint, plain, anteroposterior views	1	2.50
Shoulder joint, stereoscopic, anteroposterior views	2	5.00
Sinuses, frontal and ethmoid, anteroposterior and lateral views	2	5.00
Sinuses, mastoid, right and left sides for comparison	2	5.00
Sinuses, maxillary, anteroposterior and lateral views	2	5.00
Skull, ventriculogram, air injection, as needed..	..	7.50
Skull, anteroposterior and lateral views	2	5.00
Skull, stereoscopic	2	7.50
Spine, cervical, anteroposterior and lateral views	2	5.00
Spine, dorsal, anteroposterior and lateral views	2	5.00
Spine, lumbosacral, with coccyx, anteroposterior and lateral views	2	5.00
Stomach, barium or bismuth meal, 14 by 17 film, after ingestion four 8 by 10 films for detection of duodenal cap; total of four 8 by 10 films, including fluoroscopy	4	12.50
Teeth, single film	1	1.00
Teeth, each additional film up to and including five films	1-5	1.00
Teeth, series (five films up to and including full mouth)	(over 5)	5.00
Thigh, femur, anteroposterior and lateral views.	2	3.75
Ureters, right and left, for comparison	(1 or 2)	7.50
Wrist, anteroposterior and lateral views	2	2.50

5. Unusual expensive medication and appliances will be supplied at cost. This includes such items as oxygen administration (marked preference being given to the use of commercial oxygen); biologicals; prosthetic and orthopedic appliances, when furnished by the hospital. Blood transfusions not to exceed $5 per hundred cubic centimeters to donor, and a hospital charge of $5 for the transfusion as a minor operation will be allowed.

6. Ambulance charges when furnished by the hospital may not exceed a minimum rate of $3 when the call is within a three-mile radius of the hospital. An additional rate of 50 cents per mile beyond the three-mile radius, one way, will be allowed.

7. Professional and other fees of persons not employed by the hospital are not included in this agreement.

8. Fees for hospitalization, and prophylactic treatment of contagious diseases not ordinarily treated in general hospitals, are not included in this agreement and should be subject to local regulation.

The 1934 ANNUAL MEETING

Elaborate plans are now under way for the 1934 Annual Meeting to be held in Springfield on May 15, 16, 17. The Sangamon County Medical Society has selected Dr. A. E. Walters of Springfield as General Chairman of the Committee on Arrangements, and the entire Society membership is divided up among the various committees, so that every member will have some specific duties to perform in connection with the meeting.

The meeting will be held in the large Knights of Columbus Building where the meeting was held two years ago, and every scientific section and general meeting will be held under one roof. The exhibits will be shown on the third floor of the same building.

There are several features of the meeting which are being arranged for the interest of the many members and guests who expect to be present. Under the supervision of the President and Secretary of the State Medical Society, a committee of ten specialists has been selected to give daily fracture demonstrations, and it is the intention of the committee to show the various common fractures, and demonstrate the approved methods of treatment for each of them.

This plan has been used for five years at the

annual meeting of the American Medical Association and all physicians who have seen these demonstrations will appreciate the importance of this project. There will be many interesting technical and scientific exhibits, which are being carefully planned so that they will be of interest to all physicians of Illinois.

The officers of the five scientific sections are arranging their programs carefully, and are planning on two or three symposiums to be given during the meeting. On Thursday morning, May 17, all sections will unite in presenting a general session which will appeal to everyone. Two or three basic subjects are to be used in arranging this program.

The Oration in Medicine will be delivered by Dr. Walter L. Bierring, of Des Moines, Iowa, who is not only President-Elect of the American Medical Association, but is also an outstanding internist of the country. We are most fortunate in having Dr. Frederick Cotton of Boston, an authority on Orthopedic Surgery, to deliver the Oration in Surgery.

The Secretaries Conference will be held on Tuesday morning, May 15, and the officers of the Conference will have one of the best programs ever given at our meetings, and one that will appeal not only to the many officers of component societies throughout the state, but also to the membership as a whole. More details concerning this Conference will be announced in the April JOURNAL.

The Pediatricians will hold their own meeting on Tuesday morning and this group has arranged a program that should be of interest to every physician in Illinois who does any work among children. Other special groups have been granted the privilege of arranging their own meetings on Tuesday morning, and special announcements concerning them will be made at an early date.

The Veterans Service Committee Dinner meeting will be held on Tuesday evening, May 15, and an excellent program has been arranged.

Wednesday evening, May 16, will be devoted to honoring our President, Dr. Philip H. Kreuscher. The President's Dinner will be held at 6:30 P. M., and the Past Presidents of the Society will be the guests of the Society at this function. Following the dinner the evening will be spent in dancing or cards, as preferred. It is hoped that everyone attending the annual meeting will arrange to honor our President on Wednesday evening.

More details concerning the meeting and the preliminary program of each section will be published in the April ILLINOIS MEDICAL JOURNAL, and every member is urged to arrange now to be present at the 1934 "New Deal" Annual Meeting.

MEDICAL ECONOMICS

The responses to the questionnaire sent to the doctors of Pulaski, Franklin, Livingston and Winnebago counties have been slow in coming in. As a result it has been impossible for your committee to do much more than chart the same and be prepared to study the completed returns. A few general statements are possible at this time. The income of the doctors of the state have on the average been diminished at least one-half in the past four years. The only exceptions to this rule are the men either on a salary, which has not been cut, or new men in a community who are building up a practice and have been able to go only one way and that is upward. The responses from Winnebago county were very good and the majority of men apparently kept their books so that they were able to fill out the questions accurately and easily. As a result we feel confident that we will have some very good statistics to present at the state meeting in Springfield next May. There has been so much loose talk by those both in and out of the profession as to the income of doctors that authentic figures will we feel sure be enlightening to all of us. We note that there is a lack of uniformity in charges by the doctors practicing in the same community. For instance in one of the counties above mentioned the charge for mileage on country call varies from twenty cents to one dollar. Surely this in itself should be evidence that the dotcors do not agree amongst themselves and if they do they fail to keep their word. Another interesting fact is that the amount of free work is increasing rapidly. Again only the records of those who keep accurate and complete account of their work can be relied upon. These show that on the average the men are doing at least twice as much charity work as they did four years ago. And as you well know charity work

is very different from the work for which charges are made but in which collection is impossible.

There is a surprisingly large number of men who are on either part or whole time salary. Whether this is a vane as to the trend of medical practice is hard to tell but surely it is proof that doctors are being obliged to do considerable work at a rate well below the accepted schedule of the community in which they live. This is demoralizing to the other men in the community and while we have no solution to the problem, we mention the fact as one worthy of consideration. In most cases the salaries have been cut, although not in the same degree as the income of the private practitioner. And even then there are many men on salary, who in their remarks state that they are far from satisfied with the conditions under which they work and the compensation they receive for the same.

Under remarks, many interesting comments and questions are brought out. These show that the doctors are genuinely concerned about the future of the practice of medicine and that a large percentage have their pet theory as to what the trouble is and how to remedy the same. Many of them mention that the overhead of most doctors is too high and advise a cutting down of overhead. This of course is advice easily given and hard to put into practice.

If there are some of the men in the counties to which the questionnaires were sent who have delayed sending the same to the Chairman of this committee, please do so at once, so that the complete report can be arranged in the near future. Up to date we have received about 85 in various degrees of completion. This is less than 50% of the number sent out but it is encouraging that so many are willing to cooperate in compiling definite statistics in regard to the income of doctors and the amount of free work that they are doing.

Questions in regard to the fee schedule of the Illinois Emergency Relief Commission and how to get the same in operation in counties which now are without that service should be addressed to either the Chairman of that committee, Dr. John Neal, Springfield, Illinois, or the Secretary of the Illinois State Medical Society, Dr. Harold Camp, Monmouth, Illinois.

Any questions on Medical Economic subjects will be answered by someone in position to do so, if sent to the Chairman of this committee with a stamped, self addressed envelope enclosed.

E. S. Hamilton, Chairman,
Medical Economics Committee.
Kankakee, Illinois.

CAN INDIVIDUALISM SURVIVE?

Historians fifty years from now will be debating the place of 1933 in the calendar of history; one hundred years hence they may be agreed as to its signficance. All that we know now is that for turmoil and insecurity, upsets and changes, and heroic endeavors to find a way out, it has not had an equal in a generation. It has tried men's souls as much as the exigencies of war ever did, and the casualties and scars and ill-effects will be felt by civilization for a century. Malnutrition, unemployment, frustration, despair and discouragement accompanying what all hope to be the tag-end of the record-breaking depression have broken physical and mental health and have wrecked even the morale of millions. Between the attrition of fraternal altruism, frank charities on one hand and the iniquitous propaganda of socialized medicine and charlatanism on the other, the family doctor has been given so little thought, or entirely ignored, that he has been all but obliterated.

His former isolation through poor communication and transportation developed in him an effective individualism which made him an outstanding figure of the community not only for medicine but for civil government and religion, but the developments of therapeutic refinements, laboratory aids and physical therapy have changed all this. Whereas a generation ago the doctor prepared his own drugs, did his own nursing and cared for all ailments and injuries, that has all passed into history. Today we are a world of specialists.

We have just read E. G. Shinner's book, "The Forgotten Man." It is a business man's analysis of industrial problems but it brings to mind the universality of all our difficulties, regardless of our vocations.

His examination, analysis and careful study of the new types of economic structure is very interesting, in that he reminds us that a weakness in human nature from which few of us are immune is to look far afield for the cause of our

failure when, as a matter of fact, it is wholly within ourselves.

"Our periods of prosperity have in a large measure been responsive to our various major developments. Each activity creates a new demand for both capital and labor, and each wave of prosperity brings benefits that are countless, unending and priceless. New activities, new developments, always bring new opportunities and profits which when spread out over a wide enough area mean prosperity," and perhaps it has been our recent prosperity wave which permitted the inroads of the paternalism of endowed institutions, the haughty arrogance of social service organizations, and the radio-broadcast propaganda of charlatans to displace the medical man and woman. But instead of "shooting at the moon" in our attacks on endowed clinics and cut-rate laboratories, (cut the price in one place and the service in another), it behooves the physician to step out a stride ahead of these trailers and affiliate himself with a hospital or medical group engaged in research and thus become a factor in some crying need of today. For example every hospital or medical group has or should have a research department carrying on work in metabolism, cancer, cardio-vascular disease or some other vital problem, participation in which provides an opportunity to receive immediate benefit from newly discovered methods of treatment of these diseases. The study of lead in the treatment of cancer, lead poisoning, the relation of the pituitary to cancer growth, the effect of raising the body temperature by means of radio-waves, the effect of diet on disease, the use of pancreatic extract in the treatment of angina pectoris and other circulatory diseases all indicate new and useful clinical procedure. It is by close touch with these research developments throughout the world and the interchange of research data with other research centers that the family doctor widens his scope of usefulness. Every year of practice must bring as much learning into our lives as did a year in college or else we are slipping. It is within us, and the opportunity is at hand for us, to obtain and apply these new discoveries. If you have not read "THE FORGOTTEN MAN" by E. G. Shinner, do so now.

PUBLIC POLICY COMMITTEE,
Illinois State Medical Society.

COMMITTEE FOR ANNUAL MEETING AT SPRINGFIELD

Reception—Don Deal, Geo. Stericker, Jr., Henry Lutyens, A. W. Barker, J. G. Meyer, I. W. Metz, T. F. Hill, D. G. Lockie.

Entertainment—A. E. Walters, Harry Otten, H. P. MacNamara.

Information—Harry Otten, Harry H. Southwick, H. T. Morrison, David McCarthy, R. T. Clark, Geo. J. Mautz.

President's Dinner—John Neal, Samuel E. Munson, J. E. Reisch.

Publicity—John J. McShane, R. C. Cook, Geo. M. Harper, A. L. Stuttle.

Meeting Place—O. L. Zelle, W. P. Armstrong, Jr., W. P. Levis.

Surgery—Jas. A. Day, Chas. L. Patton, C. W. Compton.

Medicine—N. Rosen, C. V. McMeen, Geo. H. Vernon, B. J. Kuly, E. K. Lockwood, T. D. Master, E. F. Pearson.

Eye, Ear, Nose, Throat—E. E. Hagler, J. F. Deal, E. T. Blair, R. I. Bullard, C. P. Colby, A. L. Hagler, F. B. Jones, E. A. Morris.

Public Health—H. S. Houston, R. K. Campbell, G. Koehler, Grace O. Wightman, R. H. Woodruff.

X-Ray—Walter Bain, F. S. O'Hara, L. M. Hilt.

Finance—Homer P. MacNamara, J. R. Neal, A. E. Walters.

Registration—P. L. Taylor, N. H. Chestnut, C. B. Stuart, B. W. Hole, E. S. Spindel.

Transportation—C. W. Milligan, J. C. Walters, Robert Flentje, J. R. Irwin.

Exhibits—A. C. Baxter, E. L. Bernard, O. H. Diechmann, H. L. Metcalf.

Contact—C. C. Copelan, Corwin Mayes, Chas. F. Harman, J. M. Salzman.

Ladies' Entertainment—O. F. Maxon, H. H. Cole, Elizabeth B. Ball, Clara F. Holmburg.

Alumni—Corwin Mayes, J. A. DeFreitas, L. D. Wright, M. M. Bradley.

Advisory—C. A. Frazee, Geo. Stericker, Sr., W. P. Armstrong, Sr., W. A. Young.

Fraternity—D. I. Martin, David E. Barker, Geo. Harvey, M. B. Jelliffe.

Golf—Fred Cowdin, R. I. Bullard, D. C. Ditmore.

Ladies' Golf—R. F. Herndon, Frank A. Evans, Franklin Maurer.

Legion—R. D. Dugan, H. B. Henkel, Stuart Broadwell, J. C. Jackman, S. R. Magill, H. H. Tuttle.

Show Committee—

Colored Reception—Robert H. Beverly, S. A. Ware.

Pediatrics—O. E. Ehrhardt, H. C. Blankmeyer.

Industrial Surg.—G. W. Staben, D. J. Lewis, J. J. Donovan, Henry Aschauer.

Secretary's Conference—H. P. MacNamara, W. W. VanWormer, E. A. Walsh.

Clinics—J. A. Lindquist, A. G. Hofferkamp, G. C. Hunt, W. C. Martini.

Attendance—J. E. Reisch, J. C. McMillan, Chas. McLaughlin, L. E. Orr, Geo. T. Palmer, Thos. W. Priest, M. E. Rolens, H. W. Sears, J. M. Shearl, Robert E. Smith, A. R. Trapp, C. W. Yeck.

DOCTORS DESIRING TO PRESENT PAPERS AT 1934 ANNUAL MEETING.

Members of the Illinois State Medical Society desiring to present papers at the 1934 Annual Meeting to be held in Springfield, May 15, 16, 17, 1934, should get in touch with the proper section officers as soon as possible.

Owing to the large membership of the Society, it is desirable to place members on the program each year who have not appeared in recent years.

The number of speakers at the annual meeting for each section is limited; consequently it is desired that all papers should be of interest to the members in general. Any member desiring to make a presentation at the annual meeting in any of the five scientific sections should write the Section Officers, giving the title of the paper, and an abstract of the same. If interesting case reports are desired to be given, tell briefly about the case of unusual interest, in making application for the place on the program.

It is the desire of all officers of the Sections to make the 1934 Annual Meeting program an outstanding one, and arrange it to the best advantage of all members. On Thursday morning, the last day of the meeting, it is planned to have a joint session of all five scientific sections, and present papers which will be of interest to all members regardless of their own special inclinations in practice.

Members desiring to make a presentation of either a paper or interesting case report, should get in touch with the proper Section Officers at an early date. The officers of each Section are herewith given.

Section on Medicine

R. F. Herndon, Chairman, Springfield.

Don C. Sutton, Secretary, 30 North Michigan Blvd., Chicago.

Section on Surgery

George W. Post, Chairman, 4010 West Madison Street, Chicago.

B. V. McClanahan, Secretary, Galesburg.

Section on Eye, Ear, Nose and Throat

George S. Duntley, Chairman, Macomb.

O. B. Nugent, Secretary, 231 West Washington Street, Chicago.

Section on Public Health and Hygiene

J. Howard Beard, Chairman, Urbana.

Lloyd Arnold, Secretary, 1817 West Polk Street, Chicago.

Section on Radiology

Robert F. Arens, Chairman, 2839 Ellis Avenue, Chicago.

F. Flynn, Secretary, Decatur.

FURTHER OBSERVATIONS ON PREPARING COPY

In addition to the data on preparing papers for publication in the JOURNAL as published in the February issue the following suggestions are submitted to promote uniformity and save time and labor on the part of authors, editors, printers and others involved:

Phony Locutions: ."He operated six cases; others were unoperated." It seems incredible that any physician or surgeon could be guilty of such a sentence, but unfortunately it is not so uncommon. Others "operate" patients. Why not operate "in" the case or "on" the patient.

The following quotation from Stedman's Medical Dictionary may clarify this usage:

"*Case* (kās) (L. casus, an occurrence). An instance of disease with its attending circumstances. The patient is not the case; the *patient* dies or recovers, the *case* terminates fatally or ends in recovery; the surgeon operates *in* a case, but operates *on* the patient."

Smith, Brown etc. Why not Smith, Brown et al.?

"Cases in whom" should be cases in which, but "patient in whom" is correct.

Capitalization: No capitals unless proper name or beginning a sentence: thus doctor, physician, dentist, pediatrician.

Names of diseases and medicines not capitalized unless named for a *person.*

X-ray not capitalized unless beginning a sentence.

Titles of articles when referred to *in the article* are not capitalized, or if capitalized should be in quotes.

Compound Words: Many medical terms formerly written separately or hyphenated are now run together as in German, which has a certain scientific advantage however cacophonous the sound. Recent editions of both Dorland and Stedman have pharyngomaxillary and sternocleidomastoid which were formerly hyphenated. A classical example of the German style is the word for postnasal catarrh:

"Nasenrauchenraumschleimhautsgeschwuelste."

A more recent example of this tendency is the title of an article in November ILLINOIS MEDICAL JOURNAL:

"Cholecystelectrocoagulability."

This title, by the way, was originally set differently but changed on the proof which shows that such combinations may be distributed according to varying ideas of either euphony (?) or onomatopoesis.

Stedman writes all gastro compounds without hyphens. Funk & Wagnall's Standard uses hyphens, indicating that medical practice follows the German style more closely.

Names Often Misspelled

abscess	inflamed
anemia	inflammation
anastomosis	inoculation
anesthesia	myxedema
benefited	per cent. (2 words with period)
bactericidal	preventive
calcareous	septicemia
carcinoma	smallpox (one word)
caseous	syphilis
diphtheria	thorough
dyspnea	though
edema	through
esophagus	tonsillitis
goiter	tryparsamide
hemorrhage	x-ray
Hippocratic	

Numbers under 10 to be spelled out; over 10, use Arabic numerals.

James O'Donnell Bennett, in the *Sunday Tribune* of January 28, February 11, and 25, published lists of words that have been shortened and simplified by the *Tribune.* These lists have aroused much interest concerning the forms that show derivations or obscure them. However, as these lists contain ordinary English words only they are not of particular interest in our study of medical terminology, except as improvement in the language will benefit all of us.

VETERANS' DINNER AT ANNUAL MEETING

The Veterans' Service Committee of the Illinois State Medical Society, with Dr. F. O. Fredrickson as Chairman, has arranged an unusually interesting dinner program for the Annual Veterans' Dinner in connection with the Annual Meeting to be held in Springfield on May 15, 16, 17. The dinner will be held on Tuesday evening, May 15.

The speakers on this program will be National Commander Edward H. Hayes, of the American Legion, Dr. E. H. Cary, Past President of the American Medical Association and Chairman of the A. M. A. Committee on Legislation, of Dallas, Texas, and Dr. T. B. Williamson, Department Surgeon of the American Legion, Department of Illinois, and also a member of the Veterans' Service Committee.

The Veterans' Dinner and Annual Meeting has been an important function at the Annual Meeting of the Illinois State Medical Society since it was first held some years ago, and the Committee is to be congratulated on having an excellent array of speakers for the next meeting.

All medical veterans of Illinois are expected to be present, and all other members of the State Medical Society are cordially invited to be present as well, and it is hoped that the efforts of the Veterans' Committee will be rewarded this year with the largest attendance of all times.

MAKE YOUR HOTEL RESERVATIONS EARLY

Springfield, the host for the 1934 Annual Meeting, has been working for some months on plans for the best meeting of all times, for the Annual Meeting to be held in that city on May 15, 16, 17, 1934.

Although Springfield is well supplied with ex-

cellent hotels, it is hoped by the Committee on Arrangements that all members expecting to attend the Annual Meeting, make their hotel reservations well in advance of the meeting. This can be arranged by writing the hotels directly, or addressing the Chairman of the Hotel Committee in Springfield.

Spurred by the unusually successful and largely attended meeting held in Peoria last year, the Committee on Arrangements from the Sangamon County Medical Society are doing everything possible to equal or perhaps exceed the 1933 registration.

It is always desirable to have hotel accommodations arranged for in advance of the meeting, and such a procedure will not only aid the members attending the meeting, but will also be of great help to the local committees, as well as the hotels. in order that adequate arrangements may be completely assured.

THE VALLEY CAMP COAL COMPANY RAN TO COVER WHEN ITS RIGHT TO PRACTICE MEDICINE WAS QUESTIONED

The *West Virginia Medical Journal,* 1934, comments editorially on the attitude of the Valley Camp Coal Company when their right to practice medicine was questioned. We quote:

"THE PAYROLL DEDUCTION GRAB

"One of the results of the late economic depression was the payroll deduction grab that was worked by a large number of employers of labor on their company doctors. For a good many years the employees of large mines or industries, especially in isolated places, have contributed a small monthly wage 'check-off' for medical service. A company doctor was then employed to render the medical service and the 'check-off' was turned over to him. He rendered all the medical service and he got all the money. If the men liked him, he stayed on the job. If they didn't like him they threw him out.

"Then came the debacle of 1929. Industry began to lose financial ground. In looking about for new ways to stem the tide, they hit on the plan of hiring the company doctor themselves, of paying him a modest salary much below the actual 'check-off', and of putting the difference in their own pockets. In other words, they decided to go into the practice of medicine themselves and barter medical service to their employes for a profit.

"In an effort to put a stop to this new and unwarranted abuse, the West Virginia State Medical Association went into court last spring for an injunction against the Valley Camp Coal Company. The suit was brought by Dr. J. T. Nolan, a member of the Association and a former 'company doctor' for the Valley Camp Company. Dr. Nolan's petition set forth that the Valley Camp Coal Company was practicing medicine without a license and requested that they be enjoined.

"All too quickly the Association, through Dr. Nolan, won its point. The Valley Camp Coal Company has ceased the practice of medicine and all money collected from their employees for medical service is paid over to the doctor or doctors who render that service. In other words, the Valley Camp Company threw in the sponge and, by refusing to fight, left nothing to be appealed to our state supreme court.

"The result of the Valley Camp case was both disappointing and gratifying. It was disappointing in that we failed to receive the statewide ruling which was our objective. It was gratifying in that one of the largest coal producers in West Virginia ran to cover and waved the white flag when we endeavored to question their methods of doing business. While we do not have a supreme court ruling on this particular question, we do have a good wholesome precedent for future guidance. It is usually the case that when the Paisley lawyers run, everybody runs."

BARBITURATES

As a preanesthetic, the proper amount of derivatives of barbituric acid given in small doses by mouth or intravenously, beginning 12 to 14 hours before the maximum effect is desired, will probably give more satisfaction than any other drug except opium that has been used for years. To relieve a nervous, high strung, sensitive patient of a sleepless night, with only partial remembrance of the trip to the operating room and of the first day after operating, is to lift from him a terrific nervous strain which, probably, few of us understand.

The barbiturates now claiming so much attention are the most dependable agents we have.—Dr. J. T. Mason, in *Surg. Gynec. & Obstet.*, Apr., 1932.

Correspondence

PLAN TO LOOSEN UP FROZEN CREDITS OF THE MEDICAL AND LEGAL PROFESSIONS

THE LAWYERS CLUB OF LOS ANGELES
COMMITTEE ON PROFESSIONAL MEN'S CREDITS
LOS ANGELES, FEBRUARY 3, 1934

To the Editor: Enclosed is a copy of a resolution of The Lawyers Club favoring a plan to loosen up the frozen credits of the medical and legal professions. As rapidly as we are able we are getting it to organizations of both professions and to such members of Congress as we can reach. We should appreciate your endorsement and such publicity as you can give it.

The plan is to have a Federal agency prescribe a standard form of obligation to be executed by the client or patient, payable in five years, to be limited to debts arising from bona fide professional service, to be endorsed by the practitioner, then to be discounted by the agency. The doctors and lawyers spend freely in proportion to their incomes. A great deal of money would be put into very general circulation and the government would get most of it back.

Our patients and clients, in the aggregate, are the solid, credit-worthy members of the community. They have needed professional service during the emergency. They need it now. They find it all but impossible to get cash with which to pay. We cannot do our full duty to the public unless we have money to provide facilities and to provide for our dependents.

We hope you can support this measure editorially and urge your professional groups to send appropriate resolutions to their Congressmen and Senators and supplement such effort as far as possible. There is a real opportunity here to give some quick relief without departing too far from sound financial principles.

The following is the resolution:

WHEREAS, the Government of the United States has been extending credit to many classes of the community which have been unable to secure loans or extensions in the ordinary course of business;

WHEREAS, no such aid has been extended to professional men;

WHEREAS, professional men, notably lawyers and doctors, must render service when required regardless of the ability of the client or patient to pay;

WHEREAS, most members of the legal and medical professions have rendered such service during the years of economic depression and now have upon their books charges for such service against clients and patients who are willing to pay but who are unable to secure funds, despite the ownership of property;

WHEREAS, this condition has resulted in placing said professional men in serious financial straits, in that they must pay in money for certain of their facilities and the support of their families while unable to collect sufficient sums in money from their debtors; and

WHEREAS, the debtors of the professional men, in the aggregate, consist of the most responsible portion of the community, whose credit in the aggregate is the foundation of all local credit;

Be It Resolved by The Lawyers Club of Los Angeles that the Congress and the President be importuned to act promptly for the relief of such professional men by setting up a system whereby the debtors of professional men, at least lawyers and doctors, may arrange long credit terms upon obligations that will be discounted at a low rate of interest by a Federal agency, thus releasing to the professional men amounts of cash in return for the credits which are now but frozen assets; and

Be It Further Resolved that copies of the resolution be dispatched to the California delegation in Congress, the President of the United States and that the committee take such other steps to foster the spirit of the resolution as it or the Board of Governors may be advised.

EXAMINATION FOR AMEBIASIS AT CHICAGO BRANCH OF THE STATE DIAGNOSTIC LABORATORY

Springfield, February 7, 1934.

To the Editor: In view of the great interest recently stimulated in amebiasis and the problem concerning this disease which has been thrust upon Illinois, the State Department of Public Health has undertaken to establish the accuracy of blood tests for the diagnosis of this disease. Arrangements have been made by Dr. Lloyd Arnold and Dr. Emil Weiss to do these tests at the Chicago branch of the State Diagnostic Laboratory, which is located at 1819 West

Polk street, Chicago. These workers have already done a total of fourteen complement fixation tests on patients known to be suffering from amebiasis, and the results on all fourteen were three and four plus reactions. Wassermann tests were run on all of the specimens for control purposes and the Wassermann was negative in each case.

With these promising results at hand it is felt that the examination of a large number of cases at this time would establish the accuracy of this method of diagnosis. Getting samples submitted to the laboratory would involve, of course, the co-operation of physicians who have under their care patients known to be suffering from amebiasis.

Over 100 cases of amebiasis have been reported in Illinois so far this year and most of these are in Chicago and vicinity. It would seem, therefore, that a considerable number of blood samples might be obtained if information concerning the project can be disseminated among physicians.

For these reasons I would appreciate it very much if you will run a notice in the next issue of the JOURNAL to this effect.

FRANK J. JIRKA, M. D.,
Director of Public Health.

BACK NUMBERS OF THE JOURNAL WANTED

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS

630 WEST 166TH STREET, NEW YORK

LIBRARY

February 19, 1934.

To the Editor: I am a great admirer of your forceful editorial policy and the progressive attitude maintained by the ILLINOIS MEDICAL JOURNAL. Our library file of your journal lacks the following parts: v. 1-2; v. 3 No. 1-7; v. 4 No. 9, 11-12; v. 12 complete; v. 17 No. 2; v. 22 No. 1, 3-4; v. 23 No. 2.

Would it be possible to insert a free advertisement in your journal for us? The favor would be greatly appreciated.

Alfred L. Robert,
Medical Librarian.

DATA WANTED ON THE INCIDENCE OF CRETINISM IN THE UNITED STATES

The Jackson Clinic,
16 South Henry Street,
Madison, Wisconsin.
February 10, 1934.

To the Editor: I am making a survey on the incidence of cretinism in the United States, and would greatly appreciate it if you would insert a notice in your JOURNAL to this effect and ask any of your readers who might have records of such cases to communicate with me. I am enclosing (see below) a form which contains the information desired.

No one has ever attempted to make a survey of this kind and it will only be through the co-operation of the medical journals and the profession that it will be possible to make such a survey. I will be especially interested to receive any photographs of these cases. I am asking that the names and addresses be given in order to eliminate the duplication of cases. When this data is compiled, I expect to turn it over to the American Medical Association, where it may be filed for further reference and study.

BLANK FORM FOR DESIRED DATA

Name .....Address .....
Nativity..... Age..... Sex.....
Brief Physical Characteristics.....
.....
.....
Brief Clinical History.....
.....
.....
Goiter {Present / Absent.....Mental Status .....
Results of Medication.....
Signed .....

Arnold Jackson, M. D.

MEETING OF MID-WESTERN SECTION AMERICAN CONGRESS OF PHYSICAL THERAPY

The Mid-Western Section of the American Congress of Physical Therapy will hold its spring session on Tuesday, March 13, 1934, at Indianapolis, Indiana. The morning will be devoted to clinics at the University and Indianapolis City Hospitals. The afternoon scientific session, commencing at one o'clock, will be held at the Indiana University School of Medicine. The evening session at eight o'clock will be held jointly with the

Indianapolis Medical Society, at the Athenaeum. The following is the scientific program:

Afternoon Session

1. Some Problems in Physical Therapy—Albert F. Tyler, M. D., President, American Congress of Physical Therapy.

2. Treatment of Precancerous Lesions of the Face—Disraeli Kobak, M. D., Assistant Professor of Medicine, (Physical Therapy), Rush Medical College of the University of Chicago.

3. Experimental and Clinical Observations on the Use of Irradiated Ergosterol—C. I. Reed, Ph. D., Assistant Professor of Physiology, University of Illinois College of Medicine.

4. Demonstration Clinic; Cancer of the Hand—E. N. Kime, M. D., Associate, Dept. of Medicine, Surgical Anatomy, Physical Therapeutics, Indiana University School of Medicine.

5. Physicochemical Basis of Physical Therapy—R. Beutner, Ph. D., Professor of Pharmacology, University of Louisville School of Medicine.

6. A Newer Conception of the Action of Infrared Radiation in Upper Respiratory Infections—A. R. Hollender, M. D., Instructor in Oto-rhino-laryngology, University of Illinois College of Medicine.

7. Physical Energies in the Diagnosis and Treatment of Cancer of the Breast—A. David Willmoth, M. D., Louisville.

Evening Session (Jointly with the Indianapolis Medical Society, at the Athenaeum)

1. An Electrosurgical Method for Obliterating the Gall Bladder—Max Thorek, M. D., Professor of Surgery, Cook County Graduate School of Medicine; Attending Surgeon, Cook County Hospital; Surgeon-in-chief American Hospital, Chicago.

2. Physical Therapy in the Rehabilitation of the Disabled—John Stanley Coulter, M. D., Associate Professor of Physical Therapy, Northwestern University Medical School; Member, Council on Physical Therapy, American Medical Association, Chicago.

No registration fee. Dinner at $1.00 per plate will be served at the Athenaeum at 6 o'clock. Cafeteria service at noon at the medical school for visiting physicians and technicians.

EDUCATIONAL COMMITTEE

February, 1934

Jean McArthur, Secretary

NEW PROJECTS

Twenty-five libraries in Cook County have been placed on the mailing list of the committee to receive material suitable for posting on bulletin boards and for reference in clipping and pamphlet files. This service has met with such enthusiastic response by librarians that it is now to be offered libraries throughout the state. An attempt will be made to send out educational articles on health conditions existing at the different seasons of the year. The committee furnished a report of its year's work to the Chicago Health Department to be incorporated with other statistical data submitted in the Annual Health Contest of the Chamber of Commerce.

Harold M. Camp addressed the Northwest Regional Conference in St. Paul, February 25th. The radio material of the Educational Committee served as the basis for his talk on "Interstate Broadcasting of Health Programs by Medical Societies."

Health exhibit secured from the American Medical Association for the Central Y. M. C. A. of Chicago.

The committee assisted the Illinois Federation of Women's Clubs in furnishing programs and publicity for District Health Institutes.

SPEAKERS' BUREAU

Forty-three physicians were scheduled to address lay meetings in Illinois. The following physicians assisted in presenting educational health talks to women's clubs, college students, Rotary clubs, Parent Teacher Associations, Home and Farm Bureaus, Optimist Clubs, Y. M. C. A.'s, Associations of University Women, High School Students:

R. F. Lischer, Harold Swanberg, Gilbert P. Pond, Arlington Ailes, Arthur J. Cramp, W. W. Bauer, J. Roscoe Harry, Alice Conklin, Clarence A. Neymann, Gustave F. Weinfeld, Bertha VanHoosen, C. O. Heindal, Gilbert FitzPatrick, Philip Kreuscher, Oscar B. Nugent, Maude Lee Etheridge, Ralph C. Hamill, W. W. Bauer, Francis E. Senear, Clayton J. Lundy, Hart E. Fisher, W. L. Crawford, Elmer Kenyon, E. G. Barton, C. N. Pease, Edris Rice-Wray, L. A. Crandall, A. S. Hershfield, R. K. Packard, F. Smithies, Kenyon B. Segner, Mary G. Schroeder, N. C. Bullock.

The programs were given by lay groups in the following counties: St. Clair, Macoupin, Cook, Bureau, Kane, Lake, Winnebago, DuPage, Douglas, McHenry, Putnam and DeKalb.

PRESS SERVICE

Six hundred and fifty-nine releases to Illinois newspapers:

358—Regular press service.
21—Monthly service.
118—Newspapers, re meeting LaSalle County.
53—Newspapers, re meeting Madison County.
36—Newspapers, re meeting branches of Chicago Medical.
52—Newspapers, re meeting Chicago Medical Society.
3—Association of Commerce, Chicago Medical Society.
18—Metropolitan notices of Chicago Medical Society.

Educational articles were written and approved for release on the following subjects:

Cerebrospinal Meningitis.
Care of the Baby in Cold Weather.
Prevalence and Cause of Arthritis.
Obesity and Health.
Lobar Pneumonia.
Amebic Dysentery.
Hand Infections.
X-Ray Examinations.
Leg Pain Caused by Disease of the Arteries and Veins.
Can Heart Disease Be Prevented?

First Aid in Burns and Scalds.

Whooping Cough.

RADIO PROGRAMS

Nineteen radio talks were given from stations WJJD, WGN, WAAF:

H. K. Scatliff—Good Parents and Bad Children.

Earl R. McCarthy—Acute Bone Infections in Children.

H. W. Elghammer—The Nervous Child.

Reinhold Schlueter—My Child Won't Eat.

W. W. Bauer—Can Heart Disease Be Prevented?

C. A. Siler—Amebic Dysentery.

H. P. Sullivan—First Aid in Burns.

M. Reese Guttman—Hoarseness.

M. P. Palmer—Cataract.

W. C. Beck—Leg Pain.

W. W. Patrick—Anemia.

N. C. Geis—Influencing Duration of Life.

Walter R. Fallon—Lobar Pneumonia.

S. A. Levin—Highlights in the History of Obstetrics.

William D. McNally—Poisons Found in Every Day Life.

S. Holtzman—Diseases of the Blood.

Wm. E. Cary—Botulism.

Alfred C. Ledoux—X-Ray Examinations.

John C. Wall—The Common Boil.

MISCELLANEOUS

Package libraries furnished doctors and club leaders.

Radio talks furnished county medical societies and program chairmen of clubs.

Moving picture films secured for lay groups.

Two hundred and twenty postal card announcements mimeographed for First District, Illinois Federation of Women's Clubs.

Three hundred and forty-two double postal card announcements mimeographed for Perry County Medical Society.

Three hundred and sixty-eight double postal card announcements mimeographed for LaSalle County Medical Society.

Twenty-nine announcements sent out for Randolph County Medical meeting of February 15th.

SCIENTIFIC SERVICE

Twelve programs given before medical societies:

Sangamon County—C. N. Pease—Injuries to the Vertebrae During Spinal Punctures.

Perry County—R. K. Packard—Surgical Lesions of the Biliary Tract and Their Management.

Scott County, Iowa—Paul B. Magnuson.

Will-Grundy—H. Douglas Singer—Psychiatry; Frank F. Maple—Sterility in the Female; C. A. Aldrich—Nephritis in Children; F. L. Lederer—Otologic Problems in General Practice.

Iroquois—Norris J. Heckel—Diagnosis and Treatment of Prostate Conditions.

Henry County—Moving Picture Films on Diagnostic Laboratory Procedures.

Kankakee—Max Thorek—Treatment of Carcinoma of the Rectum by Electrosurgery.

Paris Hospital—Eugene F. Traut—Arthritis.

Fulton—R. K. Packard—Medical Economics.

CONFERENCE OF JEWISH WOMEN'S ORGANIZATIONS

Physicians and their patients are invited to attend the Conference of Jewish Women's Organizations (ninety groups affiliated) meeting at 185 North Wabash Avenue, 22nd floor, on Monday, March 26, at 1:30 o'clock.

The auditorium is to be equipped with bone conduction and air conduction hearing aids furnished through the courtesy of the Sonotone Corporation. In order to plan for adequate service, please advise Mrs. Louis Pelton, the chairman, care of The Chicago Woman's Aid, 185 North Wabash Avenue, as to the number of headphones desired for your guests, and to avoid confusion or embarrassment, kindly suggest that they be seated not later than 1:00 o'clock and hear music while waiting for the business meeting, which begins at 1:30 o'clock promptly.

PROGRAM

Dr. Alfred Lewy—Chairman appointed by The Chicago Laryngological and Otological Society on School Survey.

Dr. George Shambaugh, Jr.—Clinical studies of Adult Deafness.

Miss Tessa Golding—Lip-Reading Demonstration.

Mrs. N. L. Noel—Exhibits Occupational Therapy, Beidler School.

Mrs. Clarence Goldman—Haven School.

Under the auspices of the Chicago Woman's Aid in cooperation with the Chicago Public School system, classes in occupational therapy are being held at the Haven School under the guidance of an expert instructor. Members of the Hearing Aids Committee of various groups have pledged to dispose of all articles, proceeds to be turned over to this group of handicapped people. A member of the committee is financing this project until it becomes self-supporting.

REPORT OF PROGRESS WOMAN'S AUXILIARY ILLINOIS STATE MEDICAL SOCIETY

MRS. SOLOMON JONES, *President*

To one who has been interested in the Auxiliary to the Medical Association since its introduction into the State, it is gratifying to note the progress from year to year. As we turn back the pages of our history through the past seven years, we rejoice with those who led in the early days—that their work has stood the test of time; that our doctors have encouraged, believed in and trusted us.

Underlying all we do is the objective—the very reason for our existence—"To take an active and intelligent part in all health activities and to promote sociability within the ranks of the profession."

At this time it is fitting to review our progress during the past three months. Cook County, in presenting Dr. Clarence C. Little, Managing Director American Society for the Control of Cancer, to a lay audience at Murphy Memorial Hall, American College of Surgeons, January thirty-first, made a valuable demonstration of what we can do in the interest of organized medicine. It was an enlightened audience that went away from

that meeting. This is the type of work our Public Relations Chairman, Mrs. W. R. Cubbins, is anxious to promote throughout the State.

In December, this Auxiliary gave a successful card party at the Congress Hotel, devoting a part of the proceeds to subscriptions for Hygeia. State and nation-wide interest is being shown in Hygeia. The Woman's Auxiliary by contributing subscriptions for libraries and schools is accomplishing much in counteracting the information that is broadcast over the radio, that is given in talks of the cultists, and that is used in advertising all kinds of "remedies" in our magazines and papers. When waiting rooms display the Christian Science Monitor and other literature, should not Hygeia also be available in a conspicuous spot? This important health magazine published by the American Medical Association should be found on reception room tables in all doctors' offices. A physician recently remarked, "Hygeia is the one magazine my patients carry away and forget to return."

The five Auxiliary Branches of Cook County meet regularly each month with excellent programs.

Coles-Cumberland and Douglas County Auxiliaries, though small, deserve credit for giving us annually members of our state board, besides the added honor of having contributed our former state president, Mrs. T. O. Freeman. Both units report that they are having regular reviews of the State Medical Journal, the A. M. A. Journal and Auxiliary News. Thus their members are informed on Food Nostrums, the Editorials of Doctor Whalen, and others.

The Publicity Chairman of Kane County reports a very delightful dinner with the doctors at St. Joseph's Hospital. The auxiliary members then retired to the parlor where a business session was followed by an interesting address by Miss Mary Monohan of the State Home for Girls at Geneva. The Kane County Medical Society meets six times a year. The auxiliary members decided to continue the plan of meeting at the same place and hour with the doctors and have two social and four educational meetings.

Livingston County is one of our new units, little more than a year old, but one of the most active with the distinction of having 85 per cent. of those eligible as members. A feature of their work has been philanthropy. They have helped St. James Hospital in providing a bounteous food shower; also the Chatsworth Library was presented a subscription to Hygeia. Their first president who retired in February writes that she has been happy in the service.

It is highly satisfactory in running through these fine reports to see that our units have endeavored, in spite of the depression, to keep their interest in auxiliary affairs at a high level. Just listen to this: The McLean County unit tells us they had 90 per cent. attendance, and their Publicity Chairman writes: "We are having very good meetings and feel that our members are more interested than ever before." I seem to read between the lines and give much credit for this to their social events happily interspersed with business. Isn't it true,

"If I knew you and you knew me,
'Tis seldom we would disagree."

Now comes Mrs. W. N. Hamilton, newly elected councilor to our State Board, from Marion County, which has the distinction of being the first in Illinois to call together their doctors' wives who agreed it would be fine to know each other better; to exchange ideas common to the physician's wife and establish a bond of true friendship. This they did in 1926. When they learned of the state organization they were quick to grasp the importance of such a movement and are now in state membership with a flourishing unit organized to correspond to the state. That they are a power in southern Illinois is certain.

An interesting Reciprocity Tea was given at the Broadview Hotel, East St. Louis, St. Clair County, to which all doctors' wives throughout the district were invited and also representative members of Women's Clubs and the Congress of Parents and Teachers. To this distinguished group was presented the noted humorist, Dr. R. F. Lischer of Mascoutah. He addressed them on the subject, "The Practice of Medicine from a Humorous Viewpoint." A reciprocity tea attracts the social minded woman. It affords the opportunity to interest every potential auxiliary member and to show them how an authentic medical address can be given to lay groups. In January, the doctors were guests of the Auxiliary at a covered dish dinner. The chairman read from the November State Journal a rescript of the address by Doctor Charles Read on Mental Health in the Home given at A Century of Progress, October 11. The instructive program was followed by a social hour.

The November meeting of the Rock Island Auxiliary was held at the East Moline State Hospital. After a business session the members adjourned to attend the medical society program, Dr. Douglas H. Singer, speaker. The December meeting was held at the Rock Island Sanitarium. A feature writer, formerly of the New York Times addressed them. This County, one of the first organized in our State, is busy planning constructive programs.

In Sangamon County as an outstanding feature of its program active cooperation is given to the Tuberculosis Seal Campaign. Two members were elected to officially represent the Auxiliary. At their January meeting, Dr. A. E. Walters spoke briefly regarding arrangements for the State Meeting to be held in Springfield May 16, 17 and 18. Dr. O. T. Maxon, General Chairman of Convention Arrangements, also spoke briefly saying that he wished to cooperate fully with the Auxiliary in perfecting plans for the convention. A group of delightful readings by Mrs. Clarissa Hagler Jorgenson, daughter of the president, closed the interesting session.

We, the Auxiliary members of Illinois, thank you, Doctors Walters and Maxon, for telling us of these plans. We are eagerly looking forward to the convention and are working to contribute our part to the success of this meeting. From our county reports we are encouraged to beleive our auxiliaries are planning to send their full quota of delegates and we do hope to see many new interested faces.

My own county Auxiliary, Vermilion, through the

Program Chairman, Mrs. A. E. Dale, formerly of the state board, has striven for two objectives throughout the year, an informed and a participating membership. Before the year closes every member will have had a part in program service. In January, the A. M. A. leaflet, "The Dog's Gift to the Relief of Suffering," was reviewed. This gave us a clearer understanding of Dr. Dean Lewis' inaugural address at the A. M. A. meeting last June in Milwaukee when he told us that if the Woman's Auxiliary did nothing more than to enlighten members of Women's Clubs of the absurdity of allowing emotional sentiment to hamper scientific medical research through their endorsement of Vivisection Societies, the existence of Auxiliaries would be justified. We, therefore, voted to distribute these leaflets to Women's Clubs throughout Vermilion County.

From Will Grundy we hear that Dr. D. W. Killinger of Joliet honored the Auxiliary by an address in which he emphasized the position of medical men in regard to welfare work and free clinics and told the importance of being informed on legislative matters pertaining to the profession. On January 3rd, a New Year's Tea was given at the home of one of the members. It was a lovely social affair with a New Year's message of good cheer from the president. The February meeting was a "Public Relations Day." The Chairman presented Dr. Andrews, City Health Commissioner, Dr. Bowles, member of the High School Board, who spoke on Health Activities in the Joliet High School, and Mrs. L. F. Kuick of the Public Health Council.

How happy I am to close this report with mention of our new unit, Saline County, which was organized on January 16, 1934, under the direction of Mrs. E. W. Burroughs, Harrisburg, Council of the Ninth District. Doctor Burroughs, president of the County Medical Society, has given full support to the Auxiliary president, Mrs. J. V. Ferrell, of Eldorado, by appointing an Advisory Committee to assist them.

Some one recently remarked to me, "If we could get all of our doctors' wives together for one evening that would be something." I hold that an informed member willing to try, could accomplish that very thing and they would like it. May I repeat that I have supreme confidence in the physician's wife wherever she is. Once she becomes familiar with the purposes and plans of our Auxiliary she will be quick to lead her husband to a sympathetic understanding and together they will take their rightful place as leaders in all health activities in the community.

In every county organized, outstanding women thoroughly conversant with the policies of organized medicine have come forward. That there will be many more is certain. Our hope is that physicians throughout the state may come to believe with Dr. R. R. Ferguson, Chairman of our Advisory Board, who stated in his address before the Woman's Auxiliary of the Chicago Medical Society that "County Medical Societies need us." Copies of Dr. Ferguson's address may be secured from the Educational Committee, Illinois State Medical Society, 185 North Wabash Avenue, Chicago.

HYPOCALCEMIA: ITS RELATIONSHIP TO MIGRAINE

G. F. Norman, Eureka, Calif. (*Journal A. M. A.*, Feb. 17, 1934), states that a few of the cases usually classified as migraine with respect to blood calcium determinations exhibit degrees of tetany varying from mild, almost imperceptible clinically, to severe. Hyperpnea in a few mild cases induced tingling of the extremities and occasionally a positive facial phenomenon. These conditions were quite constantly associated with low determinations of calcium in the blood. It is not assumed, however, that all cases of migraine exhibit these phenomena. As a matter of fact, cases of frank operative tetany that have been observed do not exhibit the characteristic migraine symptomatology. Numerous cases are apparently associated with disease of the biliary tract. However, the failures of surgery on this system to relieve the unilateral headache are only too well known. The question is raised whether or not the biliary disturbance depresses the calcium regulating mechanism or, on the other hand, that the calcium disturbance alone favors pathologic changes in the biliary system. For this complex the author proposes the term "migraine-tetanic syndrome" conforming to the idea that a degre of hypoparathyroidism exists and that the latter condition exists more frequently than is generally accepted. He assumes that symptoms of migraine and tetany are maintained dormant in this group by the calcium regulating mechanism. One or the other complex may predominate. Whether unilateral headache and nausea with or without vomiting should be included in the picture recognized as tetany remains for further study. He observed about seventy patients complaining of periodic headaches associated with nausea and vomiting, and most of them have been improved by the oral administration of viosterol or the parenteral administration of potent parathyroid extracts.

DINITROPHENOL: ITS THERAPEUTIC AND TOXIC ACTIONS IN CERTAIN TYPES OF PSYCHOBIOLOGIC UNDERACTIVITY

Jules H. Masserman and Harry Goldsmith, Baltimore (*Journal A. M. A.*, Feb. 17, 1934), studied the pharmacologic and psychotherapeutic effects of sodium dinitrophenol in eighteen patients whose psychobiologic status was characterized by sluggishness, passivity and apathy. In therapeutic dosage the drug caused a mean rise of 32.9 ± 3.31 per cent. in the rate of oxygen consumption and a mean weight loss of 0.92 pound (417 Gm.) per week. Toxic effects occurred in five cases and were characterized by a fall in blood pressure, tachycardia, acidosis, progressive stupor and one death. Intermediate or adverse psychotherapeutic effects were observed in eight and four patients, respectively, while six patients showed a definite improvement in their mental state, apparently attributable to the medication. Dinitrophenol is therefore unpredictably toxic to some patients, but its careful administration may be of empiric benefit in certain types of recent and insecurely established psychobiologic underactivity.

Original Articles

ACUTE INTESTINAL OBSTRUCTION, MECHANICAL IN TYPE, OF THE JEJUNUM AND ILEUM*

WM. R. CUBBINS, B. S., M. D., F. A. C. S.,
CHICAGO
and
AMOS FEY, B. S., M. D.,
GALESBURG, ILLINOIS

From the wards of Cook County Hospital and the Surgical Department of Northwestern University, Chicago.

In this paper we find that it is essential to exclude any obstructions of the great bowel, because these cases, as a rule, are different, although one can and does occasionally have an acute intestinal obstruction from a malignancy in the large bowel which simulates an obstruction of the small bowel. We wish to make an etiologic classification of acute mechanical obstruction, because many papers have been written in which the etiology is considered from pathologic, etiologic, and symptomatic standpoints.

Ten years ago one of us wrote a paper which was never published because at that time an enormous amount of experimental work in relation to the chemical changes of the blood, the putrefactive and toxic changes in the contents of the proximal bowel and in the obstructed loop were being considered from an experimental standpoint in the lower animals, and we thought that these things might serve to change our opinions as to the conclusions to be drawn from clinical cases. Such, however, has not been the case. There have been very few, if any, things of value obtained from experiments in intestinal obstruction in relation to treatment. The problem remains exactly the same as it has been during the past forty years, in that the obstruction must be relieved in the great majority of cases in order to save the life of the patient. A few moribund cases have been saved by the judicious use of an enterostomy. On the other hand, it is our belief, and the clinical reports seem to support thir belief, that an enterostomy is far from possessing the great value that has been ascribed to it by some authors. We are certain of one thing and that is that if one has a strangulated loop of bowel in danger of perforating, an enterostomy proximal to it will not be an insurance against its perforation and rupture into the belly. We are also relatively sure that if an enterostomy is made it must be made with a large tube in the bowel near the obstruction, in order to contribute the maximum degree of benefit, always keeping in mind that as soon as the general condition of the patient improves and there is no passage below the ileostomy or jejunostomy, some effort must be made to free the strangulated loop.

Heretofore, many authors have held that an ileostomy or jejunostomy have been of life-saving value. This we have never believed and the results of our research have shown a higher mortality with either an ileostomy or jejunostomy than with a resection. Where a resection of an intestine is absolutely necessary, the mortality due to exhaustion, infection, failure of the sutures to hold, necroses of the bowel and subsequent obstruction, is about fifty per cent. even in the most competent hands. However, this mortality is less than that following the injudicious use of enterostomies of any kind.

The etiology of intestinal obstruction may be divided as follows:

1. Mechanical
   - (a) Previous abdominal operations
   - (b) Hernia
     Femoral-Inguinal-Umbilical-Internal
   - (c) Previous diseases
     1. Salpingitis
     2. Appendicitis
   - (d) Vestigeal Remnants
   - (e) Tumors of Female Genitalia
   - (f) Rotation Obstructions
   - (g) Foreign bodies
2. Intussusception with or without pedunculated tumor
3. Dynamic or Spastic
   - (a) Lead
   - (b) Tyrotoxicon
   - (c) Tabes
4. Adynamic or Paralytic
   - (a) Embolus
   - (b) Thrombosis
   - (c) Peritonitis

First, we have the great group of common causes and do not consider the great number of large external herniae concerning which there is no doubt, but the little hidden masses that are so commonly overlooked. Intussusception ranks second; dynamic or spastic third; adynamic or paralytic fourth. We do not class as paralytic a distention of the abdomen with tinkling sounds. To us paralytic ileus means an absolutely silent

*Read before Section on Surgery, Illinois State Medical Society, at Peoria, May 17, 1933.

bowel caused by a general peritonitis, embolus of mesenteric artery, or a thrombosis of the deep veins. The conditions so commonly called paralytic ileus with marked distention following some abdominal attack, we are firmly convinced is due to a mechanical obstruction in the great majority of cases. This mechanical obstruction is caused by a fibrinous adhesion with kinking of the bowel, and we are convinced that many of these free themselves, allowing the passage of gas, and we doubt that the bowel has ever been truly paralyzed, except for the temporary paralysis due to excessive manipulation.

Pain: Pain is always present when there is an obstructed bowel in an individual whose nervous system is normal. Its character varies with the amount of bowel that is blocked and the firmness of the constricting band; that is to say, with a large loop of bowel and its mesentery in a firm band, there is severe and agonizing pain which will frequently cause shock, collapse and, possibly, death. If we have a smaller loop, pain is sharp and severe, usually around the umbilicus and it is more or less constant, being aggravated by the struggling bowel and slightly lessened when the bowel is quiet. Pain is also apparently lessened when the enclosed loop loses its vitality and increases to a violent condition when the gangrenous loop ruptures.

Nausea and Vomiting: Nausea and vomiting are always present. The stomach contents are followed by a greenish material and, later, by a brown, foul-smelling material that is characteristic of a neglected bowel obstruction. Some authors state that the presence of this brown, foul-smelling material is ante-mortem. Such is not the case, but where it is present there is certainly a 50 to 60 per cent. mortality.

Constipation: Constipation, that is, a failure to pass feces or gas, is absolute in a complete obstruction after the lower bowel has evacuated itself due to the shock of onset, or with enemata. We have seen one case that was operated upon within two hours of the time the nurse reported a bowel movement and gas, in which there was a point of necroses in a strangulated loop of jejunum, but we had no history of any previous evacuation of the bowel, either with or without enema following the onset.

During operative procedures we have never observed gas to be present in the bowel of the human animal distal to a complete obstruction.

Tenderness: The abdominal findings show a tenderness that is usually present over the point of obstruction. This tenderness usually increases the longer the obstruction remains without relief. It is less easily detected in a large, thick abdomen, but has been uniformly present in our series of cases in moderately sized or thin individuals.

Distention: Distention varies with the position of the obstruction. One can have a complete obstruction high in the jejunum with the scaphoid abdomen. As a rule the distention increases with the duration of the obstruction, but there is no question but that it can be decreased by excessive vomiting and thorough gastric lavage; however, the distention that follows a perforation of the gangrenous loop of the proximal bowel cannot be relieved except by an incision in the abdominal wall.

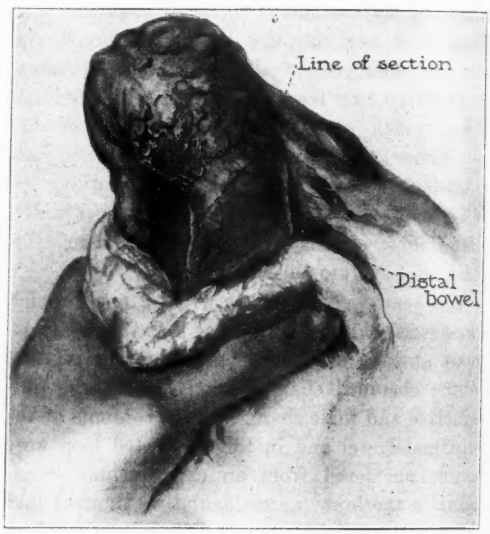

Fig. 1. The bowel is shown grasped with a gauze sponge held between the thumb and index finger of an assistant, because forceps of any kind are contraindicated. The oblique incision across the bowel and mesentery is necessary to obtain a direct blood supply to the free border. That portion of the mesentery with damaged or thrombosed vessels must be resected also.

Gurgling: Gurgling of a sharp metallic type in the presence of the other symptoms is highly suggestive and, if it continues without the pass-

age of gas, is an indication for an operative attack. In only one case have we observed gurgling to be absent and that was in a strong, husky young prize fighter with an obstruction that had endured 48 hours and was secondary to an acute suppurative appendicitis. No sounds were heard over his belly and at the operative attack there was very little distention of the proximal bowel, but the bowel was thickened, reddened, and muscular. Obviously this is a very unusual case and it is the exception that frequently proves the rule.

Visible Peristalsis: Visible peristalsis is normally present in individuals with thin or lax abdominal walls. In cases with obstruction, this peristaltic action is markedly increased. Peristalsis may show through a firm muscular ab-

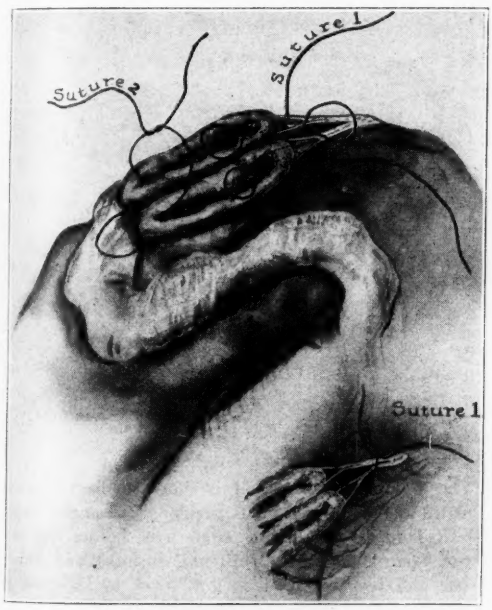

Fig. 2. Demonstrates the closure of the mesenteric border and the triangle. When tied this suture, if placed as illustrated, lessens the danger of perforation at this point. The suture in the free border has also been inserted so that there will be an approximation of the peritoneal surfaces.

dominal wall where there has been a partial obstruction present long enough to give a marked hypertrophy to the proximal bowel.

A scaphoid abdomen must be carefully inspected with grave suspicion as to the presence of tabes, lead poisoning, or food poisoning. High jejunal or pyloric are the only obstructions from which these three conditions must be differentiated, and these types of obstruction are not common.

Leukocytosis: There has been a vast amount of discussion concerning the number of leukocytes found in cases of intestinal obstruction. There is no question but that in the beginning there is little, if any, increase in the leukocytes, but at a later period, following nausea, vomiting and dehydration, there is no doubt about there being a marked increase in leukocytes. We have had quite a few cases with 20,000 leukocytes and two or three with more than 30,000 leukocytes, in which there had been no perforation and no evidence of any other inflammatory area in the patient.

Temperature: The temperature varies from 97 or lower in the early shock of a massive complete obstruction, to 103 in cases where no inflammation or perforation can be demonstrated. We are firmly convinced that Donald K. Bacon and his collaborators were absolutely correct when they stated that the dehydration caused by vomiting could produce a marked temperature rise, as well as a marked rise in the non-protein nitrogen content of the blood, and a decrease in the chlorides and other essential salts.

Pulse: The pulse varies greatly. In the beginning of a small obstruction, which is relatively loose, one may find a slow pulse until dehydration supervenes. But if there is a mass of bowel and mesentery constricted in a firm band, the pulse becomes rapid, either immediately or in a very short while, and is followed by shock and collapse.

Skin: The skin shows little, if any, changes, except in those cases of shock, when it is moist. Later, however, the skin becomes dry. The mucous membrane of the tongue and lips is dry, cracked, and frequently very much irritated by the material vomited. Cases that reach this stage are always in serious condition, need fluids immediately, and an early surgical attack is indicated.

Morbid Anatomy: In a true acute intestinal obstruction, the proximal bowel is nearly always distended, thickened, reddened, and late in the attack, somewhat granular. If this type of

bowel is not seen upon entering the abdomen, no obstruction is present. The abdominal cavity always has an increased quantity of serous fluid present in all true cases of obstruction, and we believe that this fluid is put out by the peritoneum as a lubricant to aid the struggling bowel.

The distal bowel has been uniformly pale, pink, contracted, and in none of our cases has gas of any type been observed within its loops. The strangulated loop may show in color a dark red, a dark blue, or a dark, greyish, gangrenous purple. The gangrene or pressure necroses occurs most commonly at the point where the proximal loop enters the strangulated area and is probably caused by the struggles of the proximal bowel in its effort to free itself from the obstruction. With an anemia due to the pressure of the band and the distention of the loop, an area of necroses at the distal portion of the obstruction may be present, but as a rule it is only in a late case and the time that is necessary to elapse between the occurrence of gangrene at the proximal end and gangrene at the distal end, we have not been able to determine.

The mesentery is frequently discolored and its veins thrombosed. If the thrombosis in these vessels can be definitely outlined with the palpating finger, the mesentery must be resected up to the point where it has been strangulated or there will be grave danger of pulmonary emboli, either at the time of operation or shortly afterward. This condition has been the cause of death in two of our cases. One of them in a child that was operated upon five hours after the diagnosis of an ileal intussusception had been made. We are of the opinion that the failure to observe these thrombotic changes in the mesentery where the bowel has been resected and the mesentery not resected has resulted in many fatalities, such as sudden death, or in pulmonary complications with pneumonia.

Complications: The changes that may follow any type of operative attack upon an obstructed bowel must be carefully considered and many of these things must be expected. The first is a recurring obstruction from a fibrinous adhesion at or proximal to the spot where the bowel has been freed from its obstruction or a resection made. These are far more common than the average surgeon believes. The second complication is an abscess from a secondary perforation in either a resected or non-resected bowel. A hemorrhagic diathesis has been observed in one case with rapidly forming petechia and this was immediately relieved by a blood transfusion. We wish to emphasize that this case of petechal hemorrhage recovered and that cases in which this condition appears should not be regarded as hopeless.

Differential Diagnosis: The differential diagnosis lies between many different conditions. It can be simulated by a torted ovarian cyst, renal colic, acute appendicitis, gall stones, acute pancreatitis, torted spleen, tabes, lead poisoning, food poisoning, and pneumonia, to mention a

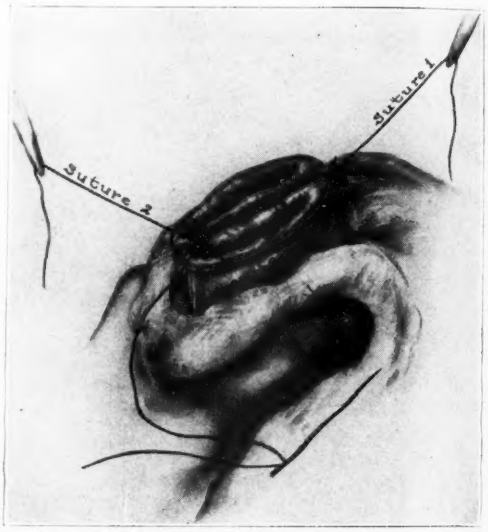

Fig. 3. Here suture No. 1 is shown to have approximated and obliterated the triangular space at the mesenteric border. The suture on the free border has been tied, approximating the peritoneal surfaces, and sutures one and two are used as guy ropes to facilitate the application of the suture.

few. The cardinal symptoms and physical findings of these other conditions must be carefully considered in relation to pain radiation and point of tenderness, with the history of onset and sequence. In tubes one must be absolutely certain of the nervous system, even down to points of anesthesia around the nipples, loss of sensation in the testicles, and the slightest variation in the pupillar reaction. In lead poisoning, blood stipules and the line that shows in the gums

must be carefully sought for. In food poisoning I am not certain of any diagnostic sign and I have seen only one case of this type in which there was pain, nausea and vomiting with a scaphoid abdomen, and no evidence of any change in the nervous system. If the abdomen is scaphoid, high obstruction, tabes, lead and food poisonings must be considered with great care. We have seen two individuals who were able to produce a marked distention with nausea and vomiting without any real obstruction being present. One of these cases has been operated upon nine times; we officiated at two of these operations, the fifth and ninth, and at neither of these was there any real obstruction present. The other case was in a woman who was addicted to acentanalid tablets. We operated upon her only once, but she subsequently had a colon resection

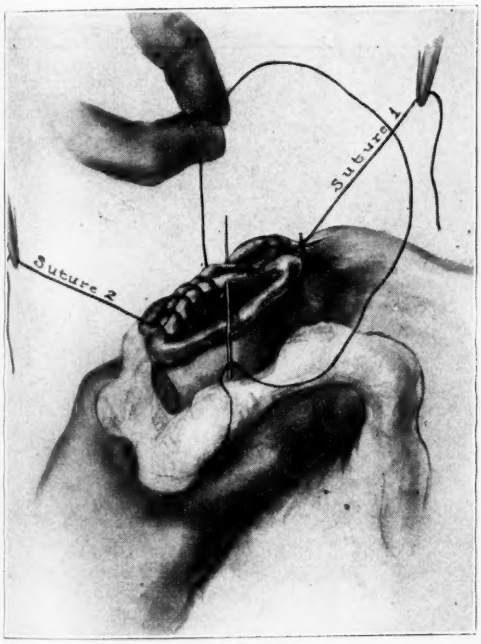

Fig. 4. The primary suture is taken and here is illustrated as being over and over. A Cushing stitch may be used, provided one back stitch is taken to avoid slipping and narrowing of the lumen.

by another surgeon; in this resected colon no pathologic changes were found. In these cases vomiting was profuse and every symptom present that one would expect to find in an intestinal obstruction. Aside from an exploratory operation, I do not know how a diagnosis can be made.

Operation: We are firmly convinced that an early operation is imperative, because of the utter inability of any one to determine the extent of the insult to which the strangulated bowel is being subjected, and the absolute certainty that when it is necessary to do any kind of a resection the mortality will lie between 50 and 60 per cent. We are also convinced that when in doubt as to whether there is or is not a partial obstruction, an exploratory operation is indicated, because a partial obstruction can be freed with a danger of not more than one-half to one-third of one per cent. Whereas, when a complete obstruction supervenes the mortality rises anywhere from 10 to 70 per cent. It is our opinion that in the partially obstructed type of case, where one is in doubt, an exploratory operation is fully justified. And if this is done more frequently, we will have a much lower mortality in the records of our general hospitals. We feel that it is absurd, when there is a grave doubt as to whether there is a complete or partial obstruction, to delay until a complete obstruction occurs or is proven to be present.

Preparation for Operation: Keep the patient warm. Use any anesthesia you choose, but with great distention we prefer ether and morphine above all other anesthesias, because of the fact that the narcosis is easily induced and there is a distinct stimulation with this anesthetic. There is no chance of a rigidity and, all in all, it has been the safest anesthetic in our hands, because with this anesthetic carefully given to complete relaxation, there is no danger of evisceration and no need to pack the abdomen full of sponges. We have not had enough experience with spinal anesthesia in this type of case to give an opinion regarding it. However, as most of the individuals suffering with intestinal obstruction and great distention have a low blood pressure, we are convinced that this anesthesia should be used with extreme care in order to avoid a lethal outcome. The stomach should be evacuated and washed out with a saline solution of about 100 degrees temperature. Cool fluids should not be used. The extremities should be bandaged to support the circulation in exhausted patients. Ringer's solution sub-cutaneously, and Ringer's solution with five per cent. glucose, intraven-

ously, should be administered simultaneously. 8,000 to 10,000 c. c. of Ringer's solution or normal salt solution, combined with five per cent. glucose, can be given intravenously every 24 hours; this is certainly the greatest means of prolonging the life of these individuals of which we have any knowledge.

The Incision: The incision is made as indicated by the findings. When in doubt the best position is in the mid-line below the umbilicus, and of sufficient size to enable the operator to work through carefully, but not so large as to permit evisceration. By all means, the first thing to be done is to find the obstruction, or, if that is not possible, find the distal collapsed loop of bowel and trace it to the obstruction. The mauling and handling of the distended loop requires a long period of time, is made only with great difficulty and, in our opinion, will produce marked shock in a very short while. The other method of finding the mass or the collapsed loop is far simpler and infinitely safer. Evisceration must be avoided at all costs, because, in spite of covering these distended loops with hot towels or other foreign bodies, the blood passing through such a thin membrane is chilled, returns to the liver and causes immediate shock, which may be so severe as to cause death upon the table or immediately after the patient has been returned to his bed. The packing of many towels or sponges into the abdominal cavity of these cases is severely deprecated. The great majority of them can be handled without the use of such a procedure. If possible, free the obstruction down in the cavity and deliver the point of obstruction with small portions of the adjacent bowel for careful inspection as to the presence of gangrene, thrombosis of the mesenteric veins, or any injury that would indicate a resection. During this inspection only a small portion of the proximal bowel must be allowed to extrude. (Hot sponges cannot take the place of the warm body.) If there is a small area of necroses it may be covered with fine interrupted silk sutures. If, however, there is a large area of necroses, a resection is, in our opinion, indicated. In accomplishing this resection, you may use a lateral anastomosis, folding in the ends and making the union, or do as we have illustrated in this paper, an end-to-end anastomosis with the Connell method, modified by Cubbins and Marvel. We feel sure that a clamp upon the proximal portions of an obstructed bowel is certain to be followed by gangrene and, if an anastomosis is to be done with any expectation of success, no clamp of any kind can be used, owing to the fact that this reddened, swollen and inflamed proximal bowel is very delicate and gangrene will occur at or distal to the point of pressure. After making an end-to-end anastomosis, as is indicated in the illustrations, we use interrupted Cushing stitches to reinforce the line of suture and, if possible, we wrap this loop in the tip of the omentum and leave it close to the abdominal wall. This resected mass is left near the wound in the anterior abdominal wall, because if there is to be a rupture following the procedure it is the safest place for it to be. And, should a fistula occur, it will close itself in a short while. The wound is closed without drainage. The stomach is washed again and, if

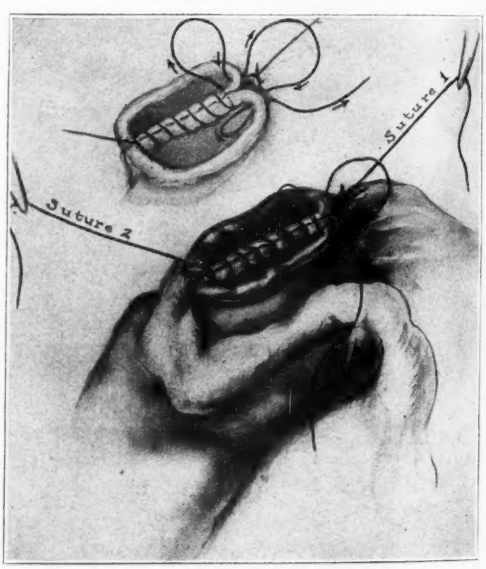

Fig. 5. This illustrates exactly the method of going, first outside, then back, in and out, so that when the suture is pulled taut suture No. 1 may be cut and the bowel automatically folds in at the mesenteric border. This suture is then held taut and it, with the one in the free border, continues to hold the bowel stretched in position for stitching.

the patient is very toxic and a donor is available, a transfusion can be made.

We feel that the procedure here outlined is much safer than the double-barrelled fistula,

where the necrotic loop is brought out of the abdominal wall and the fistula closed at a subsequent operation. It is folly to think that the secondary operation for the closure of this type of fistula is not fraught with serious danger. It is our opinion that it will carry pretty close to 25 to 30 per cent. mortality, as one may have ulceration of the abdominal wall, emaciation and loss of strength during its period of function. However, if one is forced to make this type of fistula, a tube should be put into the proximal bowel abut three inches deep and connected with a bunsen pump, in order to prevent the irritating intestinal contents from digesting the abdominal wall.

We have never seen any ill effects from allowing the contents of a strangulating loop that was not gangrenous, or the contents of the proximal bowel, to pass into the distal portion of the bowel; and, as has recently been shown in the experimental animal, the contents of the obstructed bowel may be taken as a vomited solution, or aspirated from the bowel and passed into the distal bowel without ill effect.

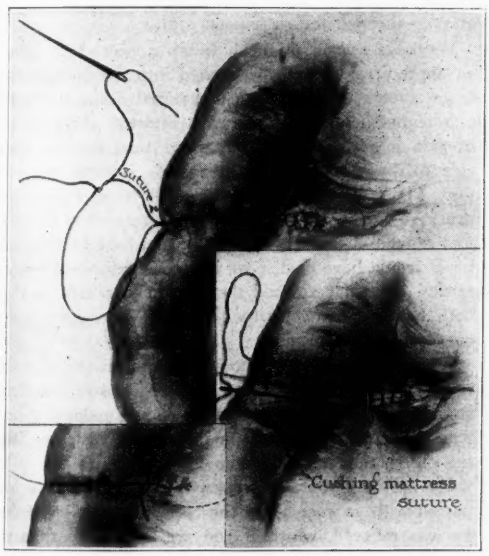

Fig. 6. Three illustrations, in the first of which the primary suture is finished and tied. No particular effort is made to have the knot inside the lumen. The other figures illustrate how this continuous stitch is reinforced with interrupted Cushing stitches, which cover the entire surface of the bowel, down on to the mesentery, care being taken not to include any blood vessels.

We have not made it a rule to evacuate a bowel proximal to an obstruction, but in certain cases we have used this procedure and in other cases we have used a proximal enterostomy with a tube of lumen about one-quarter of an inch in diameter. Of the two procedures, that is, evacuating the proximal loops or making a large enterostomy proximal to the reunited bowel, we feel that the enterostomy is far the safer procedure. Following the operation just as much Ringer's solution or normal salt solution, with five per cent. glucose, should be put into the veins as the patient can stand. And please do not fail to remember that subsequent obstructions, perforation, and abscess formation are extremely common following a resection of the bowel or the replacement of an injured loop that has not been resected into the belly. When these complications occur, it is our opinion that it is absolutely indicated to reopen the abdominal cavity, either through the original incision or a new incision, in order to determine the exact cause of the complication. At this secondary attack one may evacuate the abscess that has formed around a ruptured resection or injured bowel, and still be able to save the life of the individual. Too many times we hesitate about a secondary attack in this type of case, where the secondary attack would avoid a fatal outcome.

Intestinal Resection

Connell Method, modified by Wm. R. Cubbins and W. J. Marvel

DISCUSSION

Dr. A. W. Christenson, Rockford: These very interesting papers make us realize:

1. That the life of a patient with an abdominal pain often depends upon the time that has elapsed from the onset until seen by the Doctor.

2. Upon the ability of the first Doctor to recognize surgical emergencies, or conditions demanding immediate or early operation such as acute or ruptured appendix, perforations of hollow viscus due to gastric, duodenal, jejunal or ulcers at any point in the gastro-intestinal tract, or perforation of any hollow viscus, or rupture of an intra-abdominal organ from other causes or other conditions such as intestinal obstruction, acute or hemorrhagic pancreatitis.

Perforations with their sudden severe pain, immediate board-like rigidity gradually spreading as peritonitis spreads must be differentiated from severe abdominal pains or gastric crisis occurring sometimes in coronary sclerosis, tabes, lesions of the spinal cord, and poisons. Spider bites have caused symptoms of a surgical abdomen with extensive peritonitis.

The appendix is probably the surgeon's best intra-abdominal friend. It is usually easy to get at, adds to his income, and fortunately most cases have the cardinal symptoms. Pain, first diffused over abdomen with vomiting, later localized with tenderness and rigidity in region of appendix, with slight rise in temperature, white blood count, and polymorphonuclears. When we have this picture we think we are sitting pretty.

But we must not forget that we may have all of the classical symptoms of appendicitis due to non-surgical conditions such as intra-peritoneal lymphadenitis in

1. Early pneumonia.
2. Following sore throat.
3. In acute infectious diseases especially in childhood.
4. Right salpingitis.
5. Stone in right ureter without pus or blood in urine due to complete block in ureter may also resemble appendicitis. Rectal and vaginal examinations are of value.

While we admit this is true we must bear in mind that we may have an acute retrocecal appendix which may perforate and kill with all of the symptoms referred to

1. The epigastric region.
2. The gall bladder.
3. The back in region of right kidney with very little or no tenderness over appendix area until after perforation, causing spreading or probable fatal peritonitis.

The appendix may also be found on the left side or in the pelvis, thus completely changing the picture.

The secret of a low mortality in surgery is an early diagnosis and to operate at the proper time. Perforations of hollow viscus or rupture of intra-abdominal organs or intestinal obstruction demand immediate operation. There should be practically no mortality from an appendix if it is removed during the quiescent period or before it becomes gangrenous and perforates.

Dr. Murphy told us to try and get at the appendix if it is abscessed from externally so as not to contaminate the peritoneal cavity. I believe this is one of the greatest life saving methods and can be carried out in a great many cases. Frequently an abdomen is opened and a walled off abscessed appendix is found that can be reached by stripping the peritoneum from the side of the abdominal wall so that it can be drained through a stab wound extra-peritoneal and drains inserted. Thus the peritoneal cavity is not contaminated.

So much for the cases considered so far. How about the neglected surgical patient that comes in with abdomen distended and tense, pulse rapid, temperature elevated, frequent vomiting, dehydrated, and tongue dry? If it is due to peritonitis following a ruptured appendix, immediate surgery is out of tthe question. In this type of a case the mortality is very high whatever treatment he gets, but he is going to die sure if his abdomen is opened at this time. Experience has taught us that the best chance for recovery in this type of a case is if he is given:

1. Absolute rest in bed with head of bed elevated.
2. Morphine ¼ grain every 1 to 2 hours until absolutely quiet and then ⅙ or ¼ grain every 2 to 6 hours as needed to keep quiet.
3. Normal saline 1000 c. c. with 100 c. c. 50% glucose subcutaneously every 6 to 8 hours.
4. 5% glucose solution intravenous constant drip until fluid balance is restored, and then about 3 to 4000 c. c. every 24 hours subcutaneously.
5. Constant moist heat to entire abdomen.
6. Nasal tube to allow stomach to empty and lavage. The tube may be left in 24 to 36 hours at a time or longer if necessary.
7. Digifolin 3 c. c. q. 3 hours if pulse is rapid until digitalized or pulse goes down to 110.
8. Absolutely nothing by mouth only hot liquids during the time that the nasal tube is in the stomach so it can drain back.

If we follow this line of treatment and carefully watch patient—frequent examinations rectal, vaginal and abdominal—once in a while we will be surprised to see one of them come out of the woods. An abscess may wall off in the peritoneal cavity so that it can be drained preferably extra peritoneal as Dr. Murphy said or even through the rectum or vagina.

We have a man in the hospital at present in whom an appendiceal abscess perforated into the bladder and large amount of foul purulent material drained through a retention catheter that was inserted through his urethra into the bladder. A short time ago we were able to drain an appendiceal abscess through the rectum. This man has recovered and the man with the drainage into his bladder is going to get well as he is up and around at present. I am sure that both of these patients would have died if we had opened their abdomens at any time that we had them under our care as they both had extensive peritonitis when they came under our care at the hospital.

Dr. Cubbins said we should operate on the obstruction cases before they were completely obstructed. That is true, but most of the cases that come under our care have been obstructed for some time, and just how long the obstruction has been complete is hard to tell. The nurse may tell you that some gas and fecal matter was passed with an enema and the patient may tell you that he was relieved, which if you are not on your guard, may have a tendency to throw you off from the right track. But, keep in mind that the higher up the obstruction the more deadly, and the more bowel there is below the obstruction the more fecal matter and gas can be found by enema after complete obstruction.

It is claimed by some that by giving the patient a spinal anesthetic it will help relieve the obstruction. Our results have not been good along that line. I do believe that spinal anesthesia gives very good relaxation, and that it is of value as it has a tendency to make the bowel empty, if the patient is not too bad; we have all seen cases of obstruction that were operated on under spinal anesthesia have an evacuation on the table after the obstruction was relieved.

Dr. E. P. Coleman, Canton: Up until about eight

or ten years ago acute intestinal obstruction was more or less a stepchild of abdominal surgery. No one wanted it, no one wrote very much about it, and there was not a great deal in the literature about the subject. Since the work of Haydn and Orr more interest has evolved, and while their original conclusions have not been upheld, it has served the purpose of stimulating interest. I was one of those who was very much impressed by Haydn and Orr's early statistics. I tried it out in a small series of cases. That series would not compare with the large series given by Dr. Cubbins and Dr. Fey. I had a small series of 20 cases with a mortality of ten. I was then under the impression that the surest way for a patient to commit suicide was for me to operate on him for intestinal obstruction. I changed my mind and then later came back to my original opinion. After reading Haydn and Orr's paper I began to look for intestinal obstruction cases. I developed a second series of 22 cases and the mortality dropped to 11.5 per cent., although, as I now see it, there was undoubtedly a great element of luck in that mortality. As soon as the case was diagnosed, the abdomen was opened and the obstruction relieved as much as possible where it seemed feasible. Jejunostomy was done in some cases and I believed I saved a few lives by so doing. With the mortality cut down to 11.5 per cent. I thought the problem had been solved and then I began to wait. If there were some doubts about obstruction developing I began to wait to be more certain of the diagnosis. Then the mortality immediately jumped to 35 per cent. That gave me one lesson. In hunting obstruction I made an early diagnosis and after all the whole question is one of early diagnosis and not a question of what treatment you use. The treatment is self-explanatory.

There are two or three problems to be met. The first, of course, is early diagnosis. When a case is brought in from the outside with the obstruction well developed, it is quite easy to say if the man who first saw the case brought it to you early, the patient would have gotten well. What about the case that develops in the hospital on your own service and is not operated on at once? I have had that happen and have seen it occur elsewhere. Dr. Collins made the statement some years ago, if he had an obstruction develop postoperatively on himself, he would want someone else to see him besides the original operator. We are inclined too much to lavage the stomach, put in a duodenal tube and waste time in the case we have operated on and which later develops obstruction. In too many instances the patient will not survive but could be saved by an early, secondary operation. I do believe that the free use of fluids, salt and glucose, are of considerable help. I think some of these cases with obstruction which is relieved will go ahead and die in a few hours. If they could be made to live a few hours longer they might get well. I am sure with the free use of glucose and salt this can be accomplished in many cases; at least that has been my experience.

With regard to the treatment used in this small series of cases, I thought it best to relieve the obstruction whenever possible. Once in a while the patient will be so sick or so nearly "all in" that you cannot do much, in which case we are justified in taking a chance on doing a high jejunostomy. Occasionally that patient will live long enough to get into better shape and then you can go in and complete the work. I believe the best thing is to do as complete an operation as you can within as short a time as possible.

A word concerning anesthesia. We all tend to go from one extreme to another, but I think probably the use of spinal anesthesia is the safest. I have used it in quite a number of cases with almost uniformly good results. These patients do not eviscerate themselves because they cannot. It gives a fine anesthetic. I have not seen where low blood pressure, unless too low, makes any difference. That may be just personal experience. I believe it is the safest anesthetic to use at this time.

Dr. C. U. Collins, Peoria: I was glad that Dr. Murphy mentioned the Schilling differential count in the diagnosis of appendicitis. There is no doubt that those cases in which infection is virulent and the system is overwhelmed with toxins and the leucocyte count is low, the operator will be misled unless he makes a Schilling differential count. It will do more to tell you how the patient will react than anything else. If the index goes down to 0.6 or 0.4 you will know that the patient will not do so well. If the index goes to 0.8 or 0.10 you will know the patient is going to get well.

With regard to obstruction, Dr. Coleman, Dr. Cubbins and Dr. Fey said the earlier the diagnosis is made the better for the patient. I think that is true. There are five cardinal points to be remembered. First, pain; second, obstipation very persistent; third, peristalsis that can be seen, felt and heard; fourth, vomiting, becoming fecal; and fifth, tympanites with great distention. I think the surgeon who waits for the vomiting to become fecal with great distention will have a high mortality. That is like watching a carcinoma of the breast until everybody is satisfied it is a carcinoma and then it is too late.

There is one point I want to leave, that these patients get worse very rapidly. If obstruction is suspected the patient should be seen every two or three hours. Dr. Fey said that peristalsis might not be heard at one listening but two or three hours later it can be heard and bowel movements may begin again. Unless you catch it when there are peristaltic waves you will not see it. That is one advantage of seeing the patient frequently. The other point is that in three hours the patient's condition can be changed. He may have signs of obstruction, temperature of 99° and moderate pain and in three hours the temperature may go higher, the pulse may go up to 130 or 140, the abdomen become distended, the vomiting will become fecal, and the mortality will be high. I want to leave that point with you, if you have a patient suspected of having obstruction he should be seen at frequent intervals.

Dr. H. J. Jurgens, Quincy: I have been very much impressed with this symposium on intra-abdominal con-

ditions. I am sure we all agree that appendicitis is one of the most treacherous things we can think of. Sometimes we think we are perfectly safe in postponing operation only to find that the patient dies in the interim. We all have come to the conclusion that operation in appendicitis should be early. However, we do not always get these cases early. As Dr. Murphy and Dr. Cubbins have said these cases sometimes get so low we do not know if they are going to get well or die. Then the old question of thirty years ago comes up, when to operate? Here the Schilling test is wonderfully helpful and practical. If the patient comes in 48 to 72 hours after the first symptoms with evidence of general peritonitis you know if you operate on that patient he will die. If you put that patient on the old time and much criticised Ochsner treatment: in the Fowler position, give him fluids constantly under the skin and in the veins and enough morphine to dull higher centers so they cannot be hammered to death, then wait until the staff count rises 5 to 10 points then you can go in and save your patient: drain the abscess and leave the appendix alone as stated by the other speakers, until some future time.

The fact that Dr. Murphy found saline fluid in the abdomen is not a sign that perforation has taken place. We know from Crile that after a certain amount of saline has been introduced into the system if you open the abdomen you will find a large portion of it in the abdominal cavity. We have simply saturated the tissues with so much fluid that it flows over into the peritoneal cavity. As to intestinal obstruction, we have had a very illuminating demonstration. We all know what a dreadful thing it is. We all know that it carries a dreadful mortality. We all know we can lower that mortality by going into the abdomen early. We have heard a great many ways this afternoon of finding out early whether we have obstruction but not one of the gentlemen discussing these papers has given us the best early diagnostic method of all, which is the x-ray. Why does the x-ray give us early indications? We know that in a normal small intestine there is practically never any gas present. It is only when a pathologic condition appears with stoppage of the bowel contents that the gas forms there. Therefore, if we send these patients immediately to the x-ray room, take a flat picture of the abdomen and find gas bubbles all over the abdomen we know the small intestine is obstructed and if in addition we find fluid levels we know positively we have intestinal obstruction.

What then is the use of waiting for visible or audible peristalsis? In the last three or four months I have had the occasion to verify that on seven or eight cases. In every one of these cases where I was a little dubious the information given by the x-ray was helpful and found correct on operation.

It would have been very interesting if Dr. Cubbins and Dr. Fey in the resume of the mortality of these cases could have included the point of obstruction, whether high or low since we know that dehydration is in inverse proportion to the distance of the point of obstruction to the pylorus. Therefore, finding the obstruction high we might on theoretical grounds prognosticate a greater mortality.

Dr. Ciney Rich, Decatur: If I heard Dr. Murphy correctly, he said he had six deaths in 497 cases of appendicitis. If that is true I have my quota filled ahead of time. I would like Dr. Murphy to tell about the drainage method.

There is one question I would like to ask about intestinal obstruction.

With obstruction in the ileum I have frequently found ileostomy necessary. When, however, the ileostomy tube is removed, a certain percentage of these cases give one the feeling that the discharging intestinal juices are going to completely digest the whole abdomen wall. What is your procedure to overcome that difficulty?

Dr. Amos Fey, Galesburg (closing the discusslon): I certainly agree with all Dr. Coleman said. It has been advocated in several articles to delay operating on obstruction until you can get some fluids into the patient. The writers specifically said it would take several hours to do that. It does not take that long. You can give fluids while the patient is on the table. You can give fluids subcutaneously and intravenously at the same time and give them safely.

A great many methods have come out by which to treat intestinal obstruction. The nature of intestinal obstruction makes it difficult to tell which is indicated by studying series of cases. One obstruction is high up, the other low down and they all have different degrees of damage to the bowel and different degrees of distention. We did not attempt to discuss intestinal obstruction in all its phases.

I agree with Dr. Jurgens about the x-ray being a valuable method of diagnosis. I did not mention it in my presentation because it had only been used in a few cases at the County Hospital. We have used it in private practice. It must be understood that we cannot use x-ray diagnosis at home, the place where many of these obstructions must be diagnosed. Barnum must never be given in a case of acute obstruction.

Regarding Dr. Jurgens' question about high obstruction, the records were not always accurate about the height of the obstruction in the bowel. Sometimes that cannot be accurately determined because you do not have enough bowel exposed. In 144 cases only five per cent. were in the jejunum, most of the others being in the ileum. A few were in the large bowel.

With regard to ileal fistula, Dr. Cubbins has suggested section to remove the secretion. I have seen one case of jejunal fistula heal. We treated the case with zinc oxide on the skind and we feel the patient every other day so the intestinal secretion would not be stimulated. That is open to criticism because you cannot feed patients every other day that are in poor condition. Two things are necessary, one to close the fistula and the other to prevent digestion of the abdominal wall.

There is one other piece of information in this series that we did not present. There were 9 consecutive cases without a death; 22 consecutive cases with only 2 deaths, illustrating the fallacy of attempting to draw conclusions from short series of cases.

SCHOOL HEALTH AND HYGIENE*

FRANCIS L. BACON
Principal of Evanston Township High School
EVANSTON, ILL.

For many years the state has given legislative recognition to the problem of the maintenance of health and the prevention of disease. In practically all states rather definite prescription has been made concerning the teaching of physiology and hygiene in the public schools.

Until the last decade or two the meeting of these state requirements has been done, almost totally, in a dull, formal, and narrowly-informative manner. A new economic and social world has brought changes to the content and methods of education, as it has to all important phases of modern life. Gradually a whole new conception of the importance of health, community and personal, has been created and by popular insistence the schools have responded with varied but earnest attempts to meet this significant problem.

It is no exaggeration to affirm that today the average man is more conscious of the general problem of health than ever before. A wide diversity of influences may be given credit for this awakening. It is not necessary to enumerate these various agencies. Suffice it to point out that periodicals and books; advertising media, almost infinite in variety; and organized educational efforts as public schools, private schools, and public associations have all happily conspired to a general realization of the importance of health.

The schools cannot continue as a vital, functioning agency within the community and for the state unless some reasonably adequate attention is given to problems in which the people of the community and state are interested. This is a practical educational axiom.

The increasingly wide social, educational and shall we say, economic interest which has developed in questions of public health and personal hygiene has challenged the school in no uncertain terms.

The implication has come that not only must the school do something about the offering of material which might constitute a course in health but that the process of health instruction should be largely improved.

It may startle those who have not thought about it to realize that the development of health courses and methods in our public schools has not been accomplished primarily by school executives or by classroom teachers. The school recognition of health has come, as almost every other subject new to the curriculum comes, by the critical attitude and pressing demands of the public.

The idea for new school courses is usually germinated in the minds of critical lay philosophers; it is incubated by means of the periodical field and the lecture platform; and it is hatched through the medium of community and state associations, clubs, movements et cetera. The teacher, in the classroom, is the last one to hear about it; and with much justice, often largely ignores a problem with which he is unfamiliar.

As a matter of fact, school executives agree that teachers generally have been exceedingly loath to recognize the demand for health courses. Surveys also testify to the fact that school executives, in large majority, strongly resist the addition of new courses to the curriculum. They maintain, and with good reason, that the school is already overburdened. If asked their belief regarding the educational value of the new material comparably to the old the replies are almost invariably favorable to the new. They affirm readiness and desire to accept the new if some of the old could only be eliminated. If time permitted, we could pause here, at some length, to discuss the traditional college requirements and how they conspire to ancient and formalized learning.

It is sufficient to point out that health has made, generally, but a weak and small advance in the high schools of the country, largely because the school principals cannot trade, as they desire, college-preparatory time for it.

In spite of much handicap, health teaching has made progress, particularly in the elementary schools. Certain localities have become more or less famous in public school health work. However, surveys show that school health work the country over is astoundingly deficient. There are, in reality, but few places which have a functioning health program which may be called more than a gesture.

*Read before Section on Public Health & Hygiene, Illinois State Medical Society, Peoria, May 16, 1933.

A noted doctor who has made himself far more famous with his pen than with his pills or his scalpel apparently believes that the public should be educated in health matters. At any rate, he not only writes books on health in popular style, but he syndicates breezy and interesting, if not always professional or accurate, health information through the columns of scores of newspapers.

In one of these articles he writes what he evidently intends as a general diagnosis of school health examinations. The quotation follows:

"It was not until they sent his son home from school with the announcement that he was too tall that my friend, Joe Griffith, lost his temper.

"He really had stood a good deal. When his little girl was too thin and came home in tears because the room was not going to get a large gold star because she was the only one that was not up to weight, he consented to try out the plan of allowing her to have milk in the middle of the morning and the middle of the afternoon session. The milk spoiled her appetite for her regular meals, and instead of getting her weight up, she lost weight, so that the room really was worse off than it was before.

"He patiently went down street and purchased a special pair of shoes because the medical inspector had sent another of his children home with the cheerful announcement, 'If you don't want your child to have knock-knees, buy a pair of Special-Built shoes.'

"He stood the expense of several tonsil and adenoid operations, against the advice of the family physician, and was not able to see that they did any good. Being of a methodical frame of mind, he counted the number of colds after the tonsil and adenoid operations, and found it was higher than before.

"The tonsil and adenoid situation caused him to do a little investigating, and he found that in a room of 43 children, 31 were reported by the medical school inspector to need tonsil and adenoid operations. He thought this was too high a proportion for any disease to occur—human nature can't be that rickety —and it has caused him to doubt tonsil and adenoid reports ever since.

"He says he has rearranged his whole life so that he never gets anything he likes to eat any more, is constantly freezing to death from too much ventilation, and that in the meantime, his children haven't got very far with an education.

"He is not sure whether he has sent them to a hospital or a school.

"But he is not going to saw his son's legs off because he is disproportionately tall for the other scholars in his room.

"He believes in the medical inspection of schools, but he thinks the reports should be made privately to the parents, and that they should be allowed to decide whether they want anything done about it or not. If they decide not, then the matter should be allowed to drop. The child should not be badgered and re-examined and reported and made to feel a disgrace or a pariah."

It is difficult to know what this distinguished purveyor of health information intended. We do not wish to be either overcritical or unfair, but, in any case, his picture is so obviously a compilation of all of the fool things ever done in health examinations. The regrettable phase is the inability of the school people to correct adequately the wrong and unjust impression of school health examinations which this article gives to a large number of readers who are interested in health.

The average doctor's knowledge of what the schools do about health is probably derived from the exceptional or disgruntled cases which are brought to his attention. Naturally, his impressions are often formed from these cases. Parents whose children have health difficulties are prone to over-anxiety, extreme attention and exaggerated expression in regard to their children's ills whether they be real or fancied. Every practicing physician can testify clearly enough to such facts. The eminent doctor whose statement we have just read has used, as is so obviously apparent, a summary of several such cases, treated as one for the purpose of dramatic and literary effectiveness.

It should be hastily stated that such exaggeration is not representative of the medical viewpoint, although there are physicians who hold doubtful views about the place, the content, and the methods of health instruction.

Those who hold to such views in a highly critical or reactionary way are, for the most part, singularly unfamiliar with what the school is doing. A school executive or teacher would be inclined to faint with surprise if a doctor should ask seriously, "Now I am interested to know exactly what the school is doing about health"; and he would be thoroughly anesthetized if a physician should visit the school to see for himself what was going on in health work.

There is still abroad an attitude, gradually diminishing in extent, that the school health program in some subtle fashion is undermining the prestige and practice of the physician. Fortunately, nothing could be further from the truth. There is ample evidence that schools have done more than any other single agency to disabuse the public of that long persistent

tradition and custom to call the doctor only in case of dire emergency. The school health policy has accepted the opportunity to introduce the good, helpful, and necessary services of the doctor upon every occasion.

The major objective of health instruction, as developed in the best schools, is to establish an active health attitude—that pleasantly vigorous reaction to our fellowmen and to other essential factors in our environment which will insure successful living. Mere freedom from pain, discomfort, or other marked evidences of disease is no longer sufficient as a goal of health. The aim of the school is to create a healthful, forceful personality of happy, vigorous vitality, mental as well as physical in its manifestations. "The purpose of the school," states Dr. Keene of Buffalo, New York, nationally known as a leader in health education, "is to establish right attitudes not only toward health and living, but toward life itself. It is more than mental hygiene; it is more than physical. It necessitates that unity of the individual which is essential for health, happiness, and contentment."

The school health program supports big muscle activity in the form of suitably graded exercise for not only generally defined types but for individuals, as well. No doubt errors have been made in the past by common exercise requirements for all. The good school of today knows better and adjusts its physical education requirements accordingly. That youth of today needs an adequate program of planned exercise more than ever before may be accepted without argument.

It is generally accepted, also, that youth should acquire certain valuable health habits which should become a regular formulated part of life. The elementary schools have made much progress in respect to the establishment of these desirable habits. It has not been possible to make effective progress in habit formation without much emphasis on drill. The necessary drive that comes with such drill produces a certain amount of publicity. Most of this publicity has proved favorable. The success of health habit programs has been, in some instances, so amazing that the school has lost its sense of balance. Too much time and attention in a few cities have been given to health and a few over-zealous teachers have used devices and incentives too ardently. These exceptional cases have demonstrated what remarkable results can be obtained when a concerted health instruction program is attempted.

Those who have had experience with strong programs of health habit-formation report that the influence upon the parents, other adults, and the community generally to better health habits and attitudes through the activities of the children is most reassuring and fully justifies the efforts made. The adult becomes impressed with the school idea that a mere knowledge of health practices is not sufficient. The modern educational conception emphasizes that true learning implies reactions in human conduct. To see the child actually follow through with habituated activity brings realization that the program is working.

It is true that the young normal child is not primarily interested in his future health. Illness is to him a temporary but immediate discomfort which he devoutly wishes to escape at the earliest possible moment. However, as he grows older his mass of knowledge not only increases but he finds the increasing need for applications of knowledge and experience in the solution of his difficulties. Deferred or future values in relation to his immediate life situations become constantly more apparent. Accordingly, drills in health habits are no longer sufficient. They must serve as a base upon which an advanced program is built. The older youth should be able to interpret health habits in the light of accurate scientific information. Otherwise, habits will be discarded by the desire for personal gratification or by the insistence of false advertising which is carried dominantly upon printed page and over the radio.

It follows that the higher grades must offer courses which will give the necessary information, designed to aid adjustment and desirable adult development, of important habituations. In such courses should be offered the scientific facts relating to the construction and function of the bodily organs, particularly those which may be definitely related to healthful activity. The major emphasis should naturally rest upon function, rather than upon mere information; upon doing and living, rather than upon stored up knowledge.

Distinct and separate courses in health probably do not provide sufficient attention commensurate to the importance of health. They might if all children took them, but usually they are elective and relatively few children complete such courses. There is, therefore, need of following up the early elementary school practice in some more comprehensive way.

Other subjects may contribute to some degree, physical education, general science, and biology especially. Community health problems are often a definite part of the science and civics program. The capitalization of the common experiences of children into organized health activities is a method which has been successfully applied in the development of a coordinated health program. Every effort should be made to emphasize health rather than disease and a program of correlated activities helps in such accomplishment.

Of all the parts of a health program the annual physical examination may well be the most contructive. Examinations enable the school to make reports to the family physician and to the parents concerning matters that need medical or dental care. The classroom teachers, through these examinations, learn of the physical condition of their pupils and make necessary adjustments of various kinds; for example, answering such questions as: should the pupil do less than normal work or can he carry a heavier load? Should he carry the strain of an outside job or is athletic competition too strenuous for him? Is his irregular attendance justified; and many others which may be peculiarly significant to the individual's school success and physical welfare.

It is surprising, to the uninitiated, to learn how many parents have failed to realize certain physical and hygienic conditions pertaining to their children which are disclosed by the school health examinations.

These examinations are also used in the better schools as a basis for the segregation in special classes of nutritional, cardiac, or orthopedic cases.

Health examinations are sometimes criticized because there is inadequate follow-up. School facilities and finance ordinarily do not permit much follow-up, but in case of schools with unusually complete health programs there is relatively little follow-up of examinations except as results are used for school adjustments. The school believes that it can go no further than to report to the parents cases which seem to need medical care or at most to the family doctor if one has been named. Now and then in exceptional cases the school may institute a procedure which finally results in family attention to a serious eye difficulty but, in general, all action in medical follow-up is left entirely to the home and this is true even in those few schools which carry a staff doctor.

The school in all of its health work attempts to lift the health ideal of the individual and for the group. The position, prestige, and opportunity of the practicing physician is thereby increased. To a community which is thoroughly conscious of the importance of constructive healthful activities and attitudes the doctor is a more necessary and significant person; and he is afforded a larger opportunity to present his services with a greater degree of effectiveness. The school and the medical profession are obligated to accept the challenge of cooperative endeavor in the development of an appreciation and preservation of the most fundamental of all human values—the health of the American people.

DISCUSSION

Mr. E. C. Fisher, Superintendent of Schools, Peoria: One who has spent so little time in the study of public school health and hygiene, and who has read much from the pen of the man who has just spoken, and who has had opinions from such leaders as Dr. Keane, comes before a group of this kind with trepidation to discuss a paper which has been so well written. The whole story of public health has been told between the lines. That is the attitude in which I come before you. Of course, I should like to disagree with Mr. Bacon. Just about ten years ago I placed on my desk this topic, that doctors disagree. I don't mean only medical doctors but I mean doctors of all kinds, and I started out in my own field, the educational, and I found out what one man said the other man said was not true. And then I got into the medical field and found that one man called a certain disease smallpox and the other called it measles. And, so I wanted to go on through, and I am still trying to do that. In the end, I hope to find a place for the layman so we can at least have one foot on the ground.

A gentleman picked me up last night and drove me home. I shall not say whether he is a professional man or not; I will leave it for you to guess. We had some cases of smallpox in town. This is what he said, "Most people call me judge, some call me worse names than that but, I will bet you a dollar to doughnuts that those are measles and not small-

pox." Now, they were diagnosed by a reputable doctor in Peoria. So that is what I mean when I say I face a difficulty in discussing public health which has been so carefully presented as it has here this afternoon.

The doctor's first thought as it came to me was a State program. My own experience goes back a little further than that of the doctor's. Early in the history of the State, the legislature developed a health program which was largely to discover contagious diseases and check contacts. Later on it grew to a much greater extent and in Illinois, for the first time only four years ago, the State legislature provided a State physical director. The work of this man was to so organize physical education as to coordinate it with a health program to conserve the masses of the people rather than the few, and that the doctor's paper indicated.

Health conscious, I am not sure of that. I presume now we can get into an interesting discussion if we take the mental side and the interpretation of one of the doctors in an Eastern university where he said that mental pabulum should be absorbed so simply and without any thinking that it would make education easy. But I am sure that is not the type of health consciousness he is talking about. Health consciousness in the sense, in which I use the term, we all want somehow to feel that invigorating pulsating strength that enables us to catch ourselves by our boot straps and go out and fight a little harder. I am coming more to feel that. There are certain forces, of course, which oppose that type of activity, but we must think health. The doctor spoke of the positive side of it. One of the puzzling things to me is the work of the W.C.T.U. that they could bring about State prohibition by pointing at the fellow in the gutter. Neither can we, in this modern day with our new interpretation of life, bring about health by continuously talking about disease. We must talk health; we must think health. I am not so sure after all that it is old-fashioned, "as a man thinketh, so he is." You can put up a good fight that way.

Another point that I think is so vital in Mr. Bacon's paper is that the school is the best point through which to reach the community. It is the clearing house of the whole situation. All the children of all the people are in the schools. You know as doctors,—and if you don't there are school men who know that, if you want the community to know something, go to the schools. You can get it quicker that way than through the press because it goes to all the children. So it is the point of contact, and that is so vital in our health program, and that is where it is in the matter of school health and hygiene. The school physician and the school nurse under his direction are able to contact and discover these contacts and isolate them and stop the spread of contagious diseases in the community. Then the improvement in the health course. We all admit that. I suppose that could be said of every course in the public school curriculum today. We are coming more to feel that the course should be developed on its functional side. You recall the picture of the doctor in the old books, how he looked at the stomach of an alcoholic and showed what liquor had done to him, etc. It is just this factual information, and very much exaggerated, I suspect, at times. So we are coming now to building up in the thinking of our young people something that is very positive in its nature. We are improving the course, here and in every other school community by coordinating the physical education and the dental department, which is part of our health department, with the medical department. Conditions in Peoria have been admirable for the development of a program of this type. There is no thought that has impressed me more than it has impressed you in Dr. Bacon's paper that the time for this is now. It is a preventive program and that is one of our difficulties in developing our health program.

It is due largely to the financial situation that we are not able to vary this program through our high schools as we do in our grade schools, having in mind prevention. None of our girls or boys in the upper grades and high schools are permitted to go into any athletic contest of any type until they have had a physical examination by the school physician or by the family physician and the report turned in by the parent.

The illustration that the doctor gave had a good deal of irony in it, a good deal of sarcasm. As I read the paper, the distressing thing that kept coming back to me was the tragedy of it as too many people believed it. How many of them read the syndicated articles that go out through the newspapers. I will not discuss what your attitude towards them is at all but the thing I am trying to discuss is that mothers largely read them. They take them into their homes and they become self-satisfied. They buy this stuff and apply it to their children. They do more harm than they do good. They read what Dr. Blank said in one newspaper and they get some other newspaper and read what some other Dr. Blank said. He didn't say that at all. One said to take Ex-Lax and somebody else said to take something else. So you are between two difficulties there. One is dealing with facts, the other with opinions. Opinions make arguments; facts are indisputable. The difficulty, many times in our co-operate movements or the lack of them is the simple fact that we don't observe the evidence. May I put it another way? I was brought up on a farm fourteen miles from town. We got to town three or four times a year, not more than that. No automobiles, no telephones. We came home with a lot of gossip and, of course, we told all the news. In the evening at supper, mother would say, "Now, boys, don't forget that no jury is asked for a verdict until it has all the evident." So, with the doctors, if they have all the facts, 99 times out of a hundred they will think the same way. It is necessary for you to know what is being done. The doctor emphasized that.

I don't take much stock, as the doctor does not, in the thought that the public health department is going to establish State medicine and is going to

undermine the family physician, etc. Sometimes our physicians are alarmed about that. Your patients don't think it. You are not going to have it that way if it can be any other way. So I am not alarmed about it. That is one thing we should not have and do not want.

The object of a health program is to establish a health attitude, healthy habits that carry over. There is no type of education in the school that is worth anything unless it functions. We have got to think of health in our teaching, just exactly as we think of our arithmetic or language or anything else. I have seen some of these children that get up and go through their tooth brush drilling with military precision and then wash their teeth once a week at home. It is getting function outside. Whenever our public health program can bring the young people to an increasingly intelligent self-direction, then we have accomplished what we started out to do. It is not enough to know, as the doctor has indicated. We must do if we expect to accomplish anything. One of our great difficulties, as you can see, is in the self-gratification of the individual in violating the laws of health, the violation of which often brings injury to himself. That is self-gratification.

Major A. P. Hitchens, M.C., U. S. Army, Fort Sheridan: My only point of difference with Mr. Bacon in his excellent paper is his deprecation of the work of public health teaching by the "over-enthusiastic." In my opinion no one can be over-enthusiastic with regard to health teaching in the public schools. If health officers desire a lowered death rate in this generation they should work in close cooperation with the physician; if they desire a reduction in the incidence of disease in the next generation, they should work in equally close cooperation with the school and the school teacher.

CARCINOMA OF THE JEJUNUM*

Report of Case

RALPH A. KORDENAT, M. D.

From the Department of Surgery, University of Illinois College of Medicine

CHICAGO

Carcinoma of the jejunum is of clinical interest because of its rarity and the fact that few cases are diagnosed early in the course of the disease when surgical treatment may be of any value. The instance of carcinoma of the jejunum here reported illustrates the difficulty of early diagnosis because of the confusing signs and symptoms relative to derangement of the gastro-intestinal system.

The actual percentage of the incidence of carcinoma of the small intestine, compared to its occurrence in the rest of the gastro-intestinal tract, is probably less than three per cent.[1-10] For some unexplainable reason it seems that carcinoma is more frequently found toward the proximal and distal ends of the gastro-intestinal tract, leaving the small bowel comparatively free. A number of theories have been advanced to explain this rarity. The fluid contents of the small bowel, its alkaline reaction, lack of abrupt bends and absence of stasis has been mentioned as possible reason for the infrequency of carcinoma in the jejunum. Mention has also been made of

Fig. 1. Carcinoma of Jejunum: Jejunum (A) opened to show (B) the primary carcinoma and (C) the communication with ulcerated, large mass of carcinomatous tissue. (Posterior view.)

those individuals who, in upholding the parasitic theory as the cause of cancer, found, in the rarity of its occurrence in the small intestine, an argument to uphold their view. In the majority of instances carcinoma of the jejunum is found during middle life. Males are perhaps more frequently afflicted than females.[1,2]

Symptoms. An early diagnosis of cancer of the jejunum is seldom made. In the majority of those instances described in the literature the patients came for treatment of complaints referable to mechanical occlusion of the small bowel.

Early in the course of the disease there is a fixed pain, insidious in onset, pressing or burning in character and located in the region of the

*Read before Section on Surgery at Peoria, May 17, 1933.

navel. The pain usually occurs soon after eating and later becomes colicky and more severe.[6] Early this pain may be relieved by laxatives, as in the instance here reported. Later, when the excruciating pain of obstruction begins, relief is obtained for short intervals by vomiting. The pain is never relieved by food or alkalies alone.

Food dyscracies are particularly noticeable. Nausea usually occurs early and is more marked soon after meals, due to the stasis in the proximal portion of the jejunum. Later, after marked distention of the bowel has taken place and reverse peristalsis occurs, vomiting is frequent. The vomitus rarely contains blood but more often bile-stained stomach contents.

Weight loss is a common finding in most cases reported and usually is more manifest later in the course of the disease.

Anemia is a rather noticeable feature. Attention has been called to the fact that patients with carcinoma of the small bowel are often treated for pernicious anemia and that they do not favorably respond to feeding of liver extracts.[2] Constipation is more frequent than diarrhea and occurs early in the course of the disease. The relief of constipation in the instance here recorded gave relief from pain, and when constipation was marked, pain was more severe. Later constipation becomes increasingly obstinate. Stool examinations often reveal occult blood. The blood pressure is low compared to the age of the patients. The duration and course of ill health is variable; the average is about eighteen months.

Physical examination during the later stages of illness usually reveals an individual who appears ill, with the clinical picture of intestinal obstruction. The abdomen is usually distended with gas. There is a visible peristalsis, though it may be hidden by a distended, obese abdominal wall. Tenderness and rigidity are marked. Rankin has called attention to the tender mass, found in the upper abdomen, that slips away from the examining fingers.[2] Borborygmus is significant.

Laboratory Findings. Blood examination shows a secondary type of anemia in nearly all cases. If obstructive signs are present, a polymorphonuclear leucocytosis will be noted, together with the other signs of intestinal obstruction.

Urinalysis may reveal the presence of indican.[7]

Roentgenological examination is of vast importance from a negative standpoint, especially in respect to examination of the stomach, duodenum, colon and gall bladder visualization. Bevan has described the "lake of barium" seen proximally to the carcinoma as an early X-ray manifestation.[11] The small bowel proximal to the tumor may be found to be distended and it seems unwise to overdistend this proximal portion of small bowel with barium, thus increasing the obstruction. Roentgenological study may best be dispensed with if definite signs of acute obstruction are present unless the opaque meal can be removed without difficulty. The use of other opaque media in roentgenological examination is perhaps more suitable than barium in such instances.

Pathology. Two types of carcinoma of the small bowel are quite generally recognized:

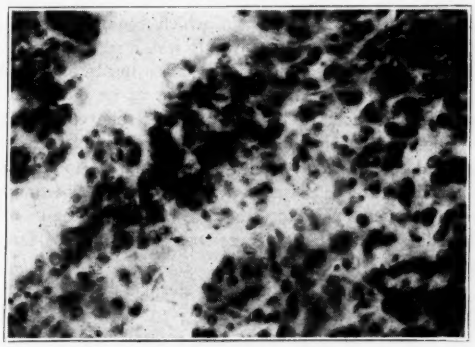

Fig. 2. Carcinoma of Jejunum: Section taken from primary growth.

1. The ring type of localized adeno-carcinoma, resembling those found in the large intestine. These cause gradual obstruction and are often difficult to locate and are not palpable early. In this type the proximal loop of bowel becomes slowly hypertrophied from gradually increased exertion and ultimately becomes distended. 2. The intestinal polyps that undergo malignant degeneration. These are usually small and cause intussusception, with the resultant sudden onset of symptoms and signs of intestinal obstruction. Judd has called attention to the fact that the omentum is often adherent to the tumor. In the instance here reported, all surrounding organs were firmly adherent to such an extent as to form a mass about 16 cm. across and yet, be-

cause of the rigid and obese abdominal wall, this was not palpated before operation.

Histologically, these tumors are of the columnar-celled and, less often, of the spheroidal-celled form. Metastasis occurs early in the mesenteric lymph nodes, peritoneum, liver, lungs and finally in the long bones.

Treatment. It seems a generally accepted opinion that early resection offers the most satisfactory results. When the mass is not removable, a side-tracking, lateral anastomosis of the small bowel gives good results.

The prognosis is poor in most cases. Naturally, if these patients are first seen after a well established intestinal obstruction, the outlook is much less favorable.

CASE REPORT

A man, 37 years of age, entered St. Joseph's Hospital, Chicago, on May 16, 1932, complaining of burning sensation in abdomen; pain in right upper quadrant; weakness and palpitation, and loss of weight.

Onset and Course: Burning in epigastrium together with a pressing, boring pain which began insidiously four or five years previously. It was irregular at first and noticed about one-half hour after meals. He took cathartics for this pain and, as long as he did so, the pain did not recur. This pain was not relieved by food or alkalies. During the year before admittance to the hospital the pain had been very irregular as to character and occurence; often it was quite severe, becoming more constant. Weakness became marked in the month preceding admittance. There was no history of tarry stools.

His family, past medical and surgical histories were negative.

Physical Examination: The patient was well developed, obese and obviously anemic. The following positive physical findings were noted. There was a marked distention of the abdomen, with a definite area of tenderness below the right infractostal arch in the mid-clavicular line. Palpation was unsatisfactory because of the obese abdominal wall. Temperature was 100.4° F, pulse 84, respiration 20, blood pressure 120/70.

Laboratory Findings: Blood: Hemoglobin 60 per cent., erythrocytes 2,920,000, leucocytes 7,850, polymorphonuclear neutrophiles 81 per cent., small lymphocytes 10 per cent., large lymphocytes 9 per cent., erythrocytes normal in size and shape, coagulation time 2½ minutes, blood Wassermann and Kahn tests negative. Stool revealed occult blood. Roentgenological examinations showed no filling defect in the stomach, duodenum or colon. The response following the visualization of the gall bladder was within normal limits.

A provisional diagnosis of duodenal ulcer was made though no ulcer could be demonstrated by roentgenological examination. The patient was placed on a milk and cream diet and given three whole blood transfusions. Liver extract (Lilly's) was given daily and 15 units of Parathormone was given every fifth day for six doses to obtain a higher blood calcium. The erythrocyte count increased to 5,020,000 on May 24. At this time the patient felt improved, was free from pain and was discharged from the hospital.

On the evening of June 21 the patient was readmitted to the hospital because of a severe abdominal pain in the lower right abdominal quadrant, chills and vomiting. At this time the abdomen was distended, rigid and tender. Blood examination revealed hemoglobin to be 64 percent., erythrocytes 3,630,000, leucocytes 22,200, and polymorphonuclear neutrophiles 84 per cent. Blood pressure was 120/78. Urinalysis was negative. Temperature was 102.8° F; pulse 100; respiration 22.

Operation: Under spinal anesthesia a long, right rectus incision was made. There was considerable fluid in the abdominal cavity. Appendix was normal. There was a large, hard, immovable mass about 16 cm. in diameter just beneath and adjacent to the transverse colon. Omentum was adherent by fibrous and fibrinous adhesions to this mass. Upon loosening the omentum several large, hematomatous swellings were seen in the lower part of the tumor. The small bowel was too firmly adherent to free from the mass. These tangled loops of bowel were so densely adherent to the mass that, upon attempting to free the loops in order to chose loops for a short circuit operation (lateral anastomosis), bleeding became so profuse from the hematomatous swellings that immediate closure with drainage was decided upon. The gall bladder, liver, kidneys and stomach were normal in size, shape and position. Some loops of the small bowel were distended.

The subsequent temperatures varied from 101° to 105° with a correspondingly rapid pulse of 140 and respiration varying from 20 to 50. The patient passed large quantities of dark brownish-red liquid stools, often containing fair sized blood clots. Patient died three days later.

Post mortem examination was limited to the abdomen. There were a few adherent, blood-stained, fibrinous masses on the peritoneum. The liver was well above the costal margin. The great omentum, near its attachment to the transverse colon, was adherent to a mass immediately distal to the hepatic flexture of the colon. This mass was also adherent to the first portion of the jejunum. Upon opening the jejunum about 4 cm. from the duodeno-jejunal junction an elevated and ulcerated mass of tumor tissue was found that nearly obstructed the lumen of the jejunum. The center of this mass was very friable and communicated with the large mass previously mentioned. The tissue of the mass proper was a soft, grey, friable tissue mixed with blood clots. There was no changes in the lining of the stomach, duodenum or colon. The other abdominal organs revealed no gross pathology. The small bowel, distal to the tumor contained free blood. Anatomical diagnosis: Medullary carcinoma of the first part of the jejunum with large regional metastases in the common mesentery and mesentery of the ascending colon.

CONCLUSIONS

Carcinoma of the small bowel may be suspected in individuals who have persistent abdom-

inal pain, secondary anemia, not relieved by the usual measures, and who have symptoms referable to disorders of the gastro-intestinal system. Exploratory laparotomy should be done in such instances, especially after competent roentgenological examination fails to reveal diseased conditions of the gall bladder, stomach, duodenum or colon. The grave mistake made in the instance here reported was that exploratory laparotomy was not done when the patient first visited the hospital.

It does not seem necessary to wait until blood has been found in the stools before any surgical procedure is instituted, though the stools should be persistently examined for blood. Proctoscopic examination will rule out bleeding from rectal disease. If there is any hope for these patients it is in early surgery.

DISCUSSION

Dr. P. H. Poppen, Princeton: Dr. Kordenat's paper covers the subject very well indeed. There are a few points I wish to stress. First of all, the rarity of the disease. Up until 1919 at the Mayo Clinic Judd reported 11 cases; from 1919 to 1929, Rankin and C. H. Mayo reported 18. Dr. Arthur Dean Bevan told me last week that he had had three or four cases. It is important to bear the condition in mind in cases of high intestinal obstruction. The x-ray findings are important in ruling out pyloric obstruction. With the vomiting of large quantities of fluid, suggestive of obstruction of the jejunum, with negative x-ray findings and blood in the stools, suspect carcinoma of the jejunum. The patient's only hope is in early resection. The prognosis is most favorable in the polypoid type.

Dr. Gatewood, Chicago: I would like to review one case because the symptoms are exactly like those described by Dr. Kordenat. This man, the father of a classmate of mine, came in with the history of a feeling of pressure in the abdomen, and vomiting of large amounts of fluid at intervals. He had visible peristaltic waves. Peristaltic waves come in the small bowel after long continued obstruction, not early. There was a small palpable mass in the upper abdomen. Much occult blood was present in the stools. The stomach contents were normal and negative for blood. The duodenal tube was not used. Sometimes we have mixed blood in the stool and at the same time there is no blood in the duodenum. This aids in localizing the source of the bleeding. The x-ray revealed an obstruction below the duodeno-jejunal junction.

The patient was operated upon by Dr. Bevan and a resection of seven inches of the bowel was done. The tumor (shown on screen) was of the polypoid type which offers the best prognosis. This patient was living when last heard from, nine years after the operation.

As Dr. Kordenat has stated, negative x-ray findings are important. This patient happened to have positive findings, but in the small intestine, without high grade obstruction, obstruction can not be found by x-ray. In this particular instance the correct diagnosis was guessed at, though some other diagnoses were considered.

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FURTHER OBSERVATIONS ON ALLERGY*

JOHN PETERS, M. D.
Asst. Clinical Professor of Medicine, Loyola University
MAYWOOD, ILL.

MAURICE J. HOFFMAN, M. D.
Clinical Assistant in Medicine, Loyola University
CHICAGO

Allergy is a term applied to such altered manifestations as asthma, urticaria, angioneurotic edema and many vasomotor disturbances.

Physical allergy is a form which is brought about specifically by a physical agent, such as heat and cold or mechanical irritation. These reactions may be immediate, delayed, local or general, and are not transferable. For a number of years many theories have been advanced as to the etiology of the various cases of hypersensitiveness and just as many have been discarded. The same applies to our methods of treatment. Judging by the knowledge and experience with other diseases we are inclined to conclude there must also be a common factor in allergy, as it invariably produces similar symptoms in many individuals under different circumstances and environment. Many patients have improved in higher altitude, others felt better in warmer climate and some find relief with

*Department of Allergy, Oak Park Hospital.

complete rest. There are a number of allergists who are enthusiastic over diathermy. Vaccines and foreign protein have been of some value. Although we are able to relieve most of our allergic patients, we are not in position to assure anyone a cure.

Doctor W. W. Duke of Kansas City, who has contributed a great deal to the science of allergy, especially that of physical allergy, states that heat and cold sensitive cases are caused primarily by a disease of the heat regulating mechanism and, in our opinion, is a source of immense information.

Doctor Rackeman of Boston states that hay fever, chronic vasomotor rhinitis, urticaria and infantile eczema clear up frequently when fever occurs from any source. Therefore, we would be inclined to believe that there must be a functional disturbance of the heat regulating mechanism. From our observation it became apparent that in all cases the mucous membrane of the upper and lower respiratory systems was most frequently affected as in asthma, allergic coryza, vasomotor rhinitis, and in all hay fever cases.

Before I proceed to report some of our experiences with allergic cases, I wish to describe a very interesting case which does not belong to any class of hypersensitiveness but may offer an explanation in our method of treating our allergic cases as described by Doctor Duke.

A young boy was severely scalded with hot water, producing a burn of the second degree, which extended from the chin to the hips, covering all of the anterior portion of the chest and abdomen. Within several hours he developed a temperature of 104°. He was immediately hospitalized. Treatments for burns were applied, but we were not able to reduce his temperature with any form of medication. We decided to try heat. The child was placed under a therapeutic lamp, exposing the entire burned area and within several hours his temperature dropped to 101° and within twenty-four hours his temperature dropped to 100° and remained so for four days.

To prove its merits the lamp was removed and the temperature rose to 103° within several hours. The heat was re-applied and the temperature dropped to 100°. This treatment was continued for ten days, the child making an uneventful recovery.

Case 1. Female patient, aged 44 years, who had been a subject of asthma and dermatitis for the past seventeen years. She noticed her condition to be much worse in hot weather and on exertion. The only relief offered in the summer would be a trip to a higher altitude. Physical examination was negative except for her dermatitis and asthmatic breathing. Skin tests were positive to pollen and treatment for same did not improve her condition. The heat of a 1500 watt nitrogen lamp applied to the body, exposing the chest and abdomen for one minute caused very severe asthmatic breathing. She was relieved within a few minutes by vigorous rubbing of the chest and abdomen with ice. The treatment continued with alternating applications of heat and ice rubs each day and within a period of six days she was free from symptoms, and the dermatitis cleared up to the extent of ninety percent.

Case 2. Male patient, aged 30 years, had been in a constant asthmatic state for two years. Various medications had been used with no benefit. Vigorous rubbing of the chest, abdomen and legs with ice gave him instant relief.

Physical examination was negative and skin tests gave a positive to dust only.

Daily alternating applications of heat and ice rubs for two months has kept him entirely free from asthmatic attacks. Being a police officer he had occasion to participate in a fight which brought on an attack of asthma, but which was immediately relieved by the application of ice.

Case 3. Female, aged 61 years, has been subject to asthma for the past fifteen years and for the past two years has been unable to do her housework and slight exertion would precipitate an attack of asthma.

Physical examination was negative except for wheezing. Skin tests were negative.

Exposure to a 1500 watt nitrogen bulb required five minutes to bring on an attack of asthma which was relieved by the application of ice. She was asked to walk across the room several times and within two minutes she developed asthmatic breathing which was relieved with ice.

The treatment with heat and cold for two months has completely relieved this patient of attacks. On several occasions since, she has spent all day at the World's Fair walking most of the time without discomfort.

Case 4. Female, aged 32 years, subject to vasomotor rhinitis for the past five years.

Physical examination negative. Skin tests were negative. Her heat tolerance was tested and within two minutes gave a very severe reaction.

Doctor H. C. Riordan of our Nose and Throat Department was consulted and observed that the mucous membranes of the nose were markedly engorged with complete obstruction to nasal breathing. By a vigorous rub with ice the nasal mucous membranes returned to normal within three minutes. Treatments of heat and cold continued for two months with complete freedom from her symptoms.

Case 5. Female, aged 56 years, subject to urticaria for the past ten years which becomes aggravated in the summer. She also noticed while standing near the kitchen stove it would get much worse, also with excitement.

Skin tests were negative.

Rubbing the forearms with ice relieved the condition within two minutes. Patient was treated every other day with heat and cold and for the past year has been perfectly free from symptoms.

From our previous experience we concluded

that heat may also be an additional factor in hay fever conditions. We selected fifteen subjects and in addition to their pollen treatment we also treated them with heat and cold. This group were entirely free from symptoms. The remainder of our pollen cases treated with pollen were benefited to the extent of seventy-five per cent. In all our cases treated with heat and cold a record was kept of their temperature after heat exposure and also after the application of ice and the following results recorded:

Case Nos.	Asthma Cases —After— Heat	Asthma Cases —After— Cold	Hay Fever Cases —After— Heat	Hay Fever Cases —After— Cold	Vaso-Motor Rhinitis Cases —After— Heat	Vaso-Motor Rhinitis Cases —After— Cold
1.	97.2	97.6	99.	98.2	98.6	98.8
2.	98.2	98.6	97.4	98.2	97.4	97.6
3.	97.8	98.	97.2	97.4	98.	98.2
4.	97.8	98.2	99.6	99.8	98.4	98.6
5.	99.6	98.4	97.8	98.	97.2	97.4
6.	98.6	98.	97.6	98.	98.	98.4
7.	98.	98.6	97.4	98.		
8.	98.4	98.6	98.4	98.		
9.	98.6	98.8	98.2	98.		
10.	98.2	98.6	97.8	98.2		
11.	98.6	98.8				
12.	97.6	97.				
13.	98.	98.4				
14.	98.4	99.				
15.	99.6	99.				

From the chart as indicated above it is apparent that the entire group in all three series showed a decrease in temperature by exposure to heat and a rise in temperature following the ice rub. These reactions were demonstrated only in those cases that were in an active state of allergy. When the same patients were feeling well and free from symptoms, the heat would raise their temperature and the ice would lower it.

On several occasions we observed the following: A patient came for treatment, apparently free from symptoms. Her temperature chart indicated a decrease with heat and increase with cold. We were certain that the patient was about to develop an active attack. The patient returned the next day, as per instructions, complaining of cough and wheezing, which came on suddenly during the night. The heat and cold treatment gave her immediate relief. Her temperature chart showed an increase with heat and a reduction with ice. The patient was assured that her attack would clear up shortly, and by evening she was entirely free from all symptoms and remained so for one month.

With all these experiments we are inclined to believe that all of these cases in which the etiological factor cannot be determined, belong to the heat and cold sensitive cases and that there is a functional or organic disturbance of the heat regulating mechanism, thereby creating a vasomotor disturbance in the various organs in the body, resulting in a passive congestion.

Doctor W. W. Duke, to whom we are indebted for this contribution of "Physical Allergy and Its Treatment," maintains that most of his thermic cases react when their temperatures are subnormal. From these observations it may be reasonable that many cases improve with diathermy, foreign vaccines, climatic changes and rest, and for the same reason many cases will precipitate an unwarranted attack during the night with no apparent cause, which may be due to lower temperature during the night, or overheating in a warm room and excessive covering, depending upon the thermic disturbance.

In conclusion we wish to state that this is just a preliminary report and will require further research, and if others work along similar experiments it may lead to a new path in the etiology in some of our allergic cases, with a possibility of a new and permanent method of treatment.

WHAT I WOULD TELL LAY AUDIENCES REGARDING PRENATAL CARE*

ESTHER SMUCKER, M. D.
TISKILWA, ILL.

Prenatal care, you know, is that phase of medical care which concerns itself with a mother and her child while that child is still unborn. One of its objects is to keep the mother safe and well and happy all the while she is carrying and bearing that child. Another of its objects is to insure a good birthright for the child, to insure that it shall be well born, that it shall have a heritage of good health, and that it shall live. Every year there are mothers and babies who do not have this care. Sometimes this care is not available, but most often in these modern days it is because the parents do not avail themselves of the opportunities which are at hand, and their failure to do so is usually due to the fact that they do not realize its importance.

While more than two million women passed safely through childbirth last year in the U. S.,

*Presented on Medical Women's Day, May 16, 1933, at Peoria.

16,000 died. More than 10,000 of those who died might have been saved if they had received proper prenatal and maternity care and careful assistance. Or we may say that for every one thousand live babies born six mothers die, and that three of these are in the preventable class. If we consider this in terms of personality the figures may mean more to us. Out of my high school class of eight girls, already two have lost their lives in childbirth, one of them being my own particular high school friend. Last year in my same home community one of my college friends succumbed to toxemic convulsions before her second baby was born. These three deaths might all have been prevented. Each of you can multiply instances of your own.

In Leslie County, Kentucky, in the mountains, where I worked several years ago, the story came in from one of the outlying districts of a woman in labor who was being cared for by one of the native midwives; the woman had received, of course, no prenatal care. The child was not lying in the proper position in the uterus of that mother, and its arm and hand wanted to come first. The mother continued in labor, the midwife kept pushing up the little hand in a futile attempt to make that baby come right, but the child remained unborn. Finally, after two such days, in desperation one of the trained nurse-midwives was called. She arrived, but it was too late; mother and babe both died. If that mother had had her prenatal care, the position of that baby would have been determined and corrected before labor, or else adequate provision for a safe delivery would have been effected.

For prenatal care does make a difference. When I went to medical school we learned that 20,000 mothers die every year. If that figure has been lessened even by four thousand, as present numbers would indicate, it is due largely to right care that these have received before and during the coming of the baby. The Maternity Center of New York City, by adequate care during the pregnancy and delivery, has been able to reduce its maternal death rate two-thirds. And so will it help you and your baby!

Therefore, go see your doctor! Not just before your baby is due, not just after you feel life, but just as soon as you suspect that you are pregnant. For there is no short cut to good obstetrics; it requires constant, detailed, intelligent care from the time of conception until the baby is at least six weeks old. No matter how good a doctor you choose to deliver your baby, this is your part in helping him to remain a good doctor so that he may adequately care for you at any moment of emergency. Therefore, I say again, go see your doctor as soon as you believe yourself to be pregnant. He will make a complete examination. He will check up on heart and lungs. He will take your blood pressure and examine your urine. He will measure your pelvis in order to determine whether the passages are large enough for the baby to be born. He will take a blood test to insure health safety for mother and child. He will make an internal examination, too. Nature probably intended that every woman should begin pregnancy in perfect physical condition. This is true in the minority of cases only, and can be ascertained only by a complete physical examination. It is a woman's right to expect this and she should never complain when the doctor insists upon just such an examination. For a doctor can never obtain results without constant co-operation from you, his patients, nor until parents realize that prenatal care is a scientific art and until they are willing to pay a reasonable price for such care.

Then, too, the doctor will want to see you every three to four weeks or perhaps even more often as pregnancy advances in order to examine urine and take blood pressure, in order to watch your weight, and in order to note the baby's position and to make any corrections or plans called for. Only in this way can he remain in full knowledge of your condition as the baby is developing, and it is in just this way that he can forestall any serious complications. And so, when your doctor asks this of you, he is not doing it to increase his number of office calls, but is taking good care of you. Moreover, he will help you to decide whether to go to a hospital or to stay at home for the baby's birth. A few years ago it was the trend to go to the hospital; now it appears that if you have the service of a well qualified physician and adequate aid at home it is safer for you and the baby to stay at home, especially when there are no unforeseen complications.

Now the doctor is not the limit of your calling

list! The very next person for you to call upon after you discover your pregnancy is your dentist. "A tooth for every child" is an old, old adage, true once because there was not prenatal care, but never necessarily true now. Let your dentist take care of your teeth, repairing as needed, advising you as needed, without fear. And then you will want to eat those foods which will save your teeth and at the same time insure good bones and good teeth for your child—your daily milk, the fresh green vegetables, eggs, fruits, whole grain foods. For if you fail to supply these needs of your child through food, nature will supply them from your own body. In addition to this, teeth should be brushed after each meal and the mouth well rinsed.

I'd like to present yet one more individual for your calling list—and that is yourself. Take time for a little visit with your own self, and face squarely your own attitude toward this glory which has come upon you. For one of the objects of prenatal care is to keep the mother happy. If there is a fear, or something you do not understand, perhaps because it is your first baby and because no one has ever told you, go to someone in your community who knows and whom you trust—perhaps it is your doctor—and find out. If there are other situations which disturb, perhaps you with your husband or family together can study the situation and find some satisfactory and happy adjustment. I earnestly believe that a visit with your inmost self is a thousandfold worth the effort.

And after your calling list is completed, there is a veritable host of little things that come in your round of daily living which do much for you and your baby. Your doctor will tell you what they are and will help to keep you reminded of them. But the main responsibility in their doing lies with you. Shall we take a brief look at them?

There is your food. You will want enough to satisfy your needs, but there is no need to eat an immense quantity; rather the need lies in the quality. You will want your minerals to build up the bones and teeth of your child—greens, milk, eggs, fresh fruits, whole grain foods. You will want vitamins in sufficient quantity to keep yourself and your child well—green and fresh foods, butter, cod liver oil. Enough carbohydrate, protein, and fat to meet your requirement, but never enough to overload your digestive system or to raise your weight excessively.

One of your chief organs of elimination is the kidney; it is one of the processes most affected by pregnancy, and that is the reason the doctor so closely watches your urine. Elimination by bowel, too, is often affected; constipation can usually be corrected by diet and exercise and by the aid of your physician. Take no cathartics save upon the advice of your physician.

The skin is another of the organs of elimination, and so calls for extra care in cleanliness. There should be a daily bath, sponge, shower, or tub. In the later months a tub bath is advised against because of the danger of dirty water entering the birth canal. A hot bath and a douche are never to be taken unless ordered by the physician. The nipples, especially in the later months, require care in cleanliness, and if hardened, cracked, or fissured should be cared for by the doctor; daily washing with soap and warm water, followed by a gentle anointing with olive oil is usually sufficient to keep them in good condition.

And just as our skin requires frequent cleansing, so, too, do the garments which we wear next to the skin. Undergarments should always be kept clean and fresh. Tight clothing should not be worn, and all clothing should hang from the shoulders to avoid constriction of any part; garters, therefore, should not be worn. Corsets should be supportive from the bottom up, and the corselet, which pulls down from the top over the breasts and abdomen, should be discarded. Shoes which have low, broad heels are the least tiring and tend to avoid injury by falls or stumbling.

Rest and sleep should be adequate, including the mid-afternoon nap habit. Exercise should be plenty and enjoyable, but never extreme. And don't forget the sunshine!

There are yet a few warning signs I'd like to tell you about. If there is any bleeding, at any time, after inauguration of pregnancy, an examination by your physician is warranted. If there is any dizziness, any spots before the eyes, any headaches, any vomiting or nausea, any swelling of face, legs, or feet, go see your doctor. If urine is scanty or painful in voiding, see or call your doctor at once. Avoid all colds and contact with colds, for colds may go into

influenza or into pneumonia, and both are exceedingly hostile to both mothers and babies. If you do contract a cold, do not hesitate to go to your doctor for treatment.

And so throughout your pregnancy, from beginning to end, and for whatever questions or emergencies may arise, let this be your motto—*go see your doctor.* Then you are doing your part in the practice of good obstetrics, and only so can the doctor do his part in the prevention of our needless maternal deaths. And so, too, do you insure the best possible birthright for your unborn child.

ENDOCRINES IN OPHTHALMOLOGY

With Reports of Cases of Exophthalmos and Cataracts Following Thyroidectomy

LOUIS BOTHMAN, M. D.*

CHICAGO

The study of the endocrines and their dysfunctions is one of the most fascinating chapters in the realm of medicine.

It is not my intention to completely review the subject, or to even more than mention the diseases produced by endocrine dysfunction in organs other than the eye. We shall limit our discussion entirely to the relation of endocrine dysfunction to the eye.

Hyperthyroidism. The first and most important of the glands of internal secretion is the thyroid and we shall deal first with its hypersecretion as is manifested in exophthalmic goiter, Grave's disease or Basedow's disease. This should really be called Parry's disease as it was first reported in 1825 by Parry in a paper called "Enlargement of the Thyroid Gland in Connection with Enlargement or Palpitation of the Heart." The eye symptoms commonly seen with goiter occur in the so-called toxic adenoma.

Retraction of the upper lid is seen earlier and more frequently than is exophthalmos. It may be unilateral or bilateral.

The wide retraction of the upper lid has some orbicularis tension which affects it and accounts for the staring, difficulty in everting the lids, infrequency of blinking, tremor on closing, and secondarily for photophobia, lacrimation and catarrhal conjunctivitis.

Retraction of the lid is relieved by thyroidectomy.

As far as endocrine exophthalmos is concerned (for we know that exophthalmos does occur with hypertension and increased intracranial pressure, etc.), it is present only in cases of hypersecretion of the thyroid. If there is no toxicity, there will be no exopthalmos. Rudemann says, "We have never had a case of unilateral exophthalmos in a case of hypersecretion. All cases of unilateral exophthalmos have been the pseudo type, due to unequal or unilateral retraction of the lids." Rudemann further states that there is no relation between the degree of toxicity and the amount of exophthalmos. In 1,000 cases, he found the high normal of 20 mm. of protrusion.

That the optic nerve is frequently involved in the severe forms of exophthalmos is familiar to all for optic neuritis is not infrequently seen when the eye protrudes 25 mm. or more. Standish has reported this condition in patients who were taking thyroid extract for obesity and Birch-Hirschfeld found optic atrophy and degeneration of the ganglion cells of the retina in dogs fed with thyroid extract. Krauss reported a case of a 23 year old male who developed papilledema eight weeks after thyroidectomy.

The occurrence of exophthalmos following thyroidectomy, and cases in which the condition increases after operation while uncommon are familiar to all of us. Many such cases are operated on a second time. This should not be done as most of these cases have an hypothyroidism. In these cases we frequently find a low metabolic rate, edema of the upper and lower lids which we see in myxedema; no widening of the palpebral fissure except that mechanically due to the exophthalmos; no staring, no trouble everting the upper lids, but there is a convergence weakness. The treatment for such cases is thyroid extract. In Rudemann and Crile's experience patients with such findings did not have marked toxic signs before operation, high B. M. R. or a fast pulse rate. They did have all the other signs. This is the group they classify as suprarenal disturbances. Crile had sixty cases which simulated exophthalmic goiter except for the exophthalmos.

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*From the Division of Ophthalmology, Department of Surgery, the University of Chicago, Dr. E. V. L. Brown, Director.

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Denervation as reported by J. Lehman helps these cases, while thyroidectomy does not.

In the true Graves' disease, we see external and superior rectus paralyses, usually the right, which do not disappear after thyroidectomy and must be corrected by muscle operations. In six of Rudemann's cases, the condition was found to be overcorrected later. The convergence weakness persists and disturbs reading and near work for many months. The condition must be treated by prisms and exercises.

The following three cases of exophthalmos which developed after thyroidectomy where none was present before operation and a fourth case in which the exopthalmos became worse after operation are briefly outlined.

1. Mrs. Z. S., 38391, aged 44 years, was first seen in Eye Clinic 7-7-32 because of an unequal exophthalmos appearing eleven months after thyroidectomy. While on the surgical service three days before operation the exopthalmometer readings were right and left 14 mm. and convergence was good. Eleven months later there was right and left (Hertl) 19 mm. with a divergence under cover, and tiring and headache after one-half hour's reading. The discs were normal and the vision with weak minus lenses were right 15/10 plus 1, left 12/10-3. There was a slight von Graefe sign more noticeable in the left eye. This patient had 5 mm. increase in the exophthalmometer readings, a convergence weakness and Von Graefe sign all appearing after operation.

2. Mr. P. H., aged 52 years, 46883, was first seen 9-25-31 when he said that he had been operated on for exophthalmic goiter in November, 1930. Five months later the exophthalmos began to grow worse and ten months later a canthotomy was done with no improvement. The left vision was always poor but the right vision is still good. There was a very marked exophthalmos in both eyes right 33, left 28 mm. The conjunctiva was cherry red and chemotic. There was limitation of adduction of the right eye. The discs were hazy, pale and their bloodvessels dark, tortuous and overfilled. There were numerous petechial hemorrhages on the discs. The maculae were normal. Right vision 4/10 plus 1, left vision 2/10. The BMR was plus 30. It had been plus 105 before operation. The patient had been taking Lugol's Iodide. On 9-29-31 the exophthalmos was right 30, left 25.5. The right eye could be elevated 15 degrees; abducted to ten degrees; adducted 35 degrees and depressed 35 degrees. Convergence was poor. The fundi remained unchanged. Both blind spots were enlarged. On 9-25-31 a bilateral cervical sympathectomy gave slight improvement for a few days and the eyes then returned to the pre-operative state. BMR was —9%. On 10-10-31 exophthalmometer readings were right 29, left 25. The corneae were still normal. On 10-15-31 the roof of the right antrum was removed with no effect on the exophthalmos. The vision was poorer. On 10-29-31 right plus 2.25 = 6/10-3, left plus 200 = 3/10. Exoph. right 30, left 25.5 mm. 11-7-31 the only change was slight right corneal haziness. 3cc pitrussin was given intramuscularly. Celluloid shield was used to protect the cornea. This treatment was continued with little change in ether eye except slight reduction in vision to right 3/10-1, left 2/10 with glasses. 3-2-31 right plus 3.00 = 6/10-3, left plus 3.00 plus 2.00c20 = 5/10-2. The left disc was swollen ½ D and pale in temporal ½ and there were no hemorrhages; right disc 1½ P.D. swelling with fine hemorrhages temporal to it.

On *1-21-23* the right lids were sutured and a right orbital decompression (Naffziger operation) was done and a piece of external rectus muscle excised for study. This showed the typical findings described by Naffziger. On 1-30-32Exoph. right 26.5, left 26. *10-12-32* right plus 2.00 plus 1.00c90 = 8/10-2, left plus 2.50 = 6/10. Still has diplopia since operation. Schiotz right and left 27.5 mm (with contraction of lower left peripheral field to 30 degrees). *1-11-33* right vision 6/10 plus 3, left vision 6/10 plus 3. Diplopia was less annoying. Exoph. right 28.5, left 26. *3-14-33* right plus 2.50-= 8/10, left plus 2.00c10 = 8/10 plus 3. Exoph. right 27, left 26.5. Could get single binocular vision. The peripheral fields were essentially normal. The discs were both definitely pale.

This is a case with very severe exophthalmos which was not helped by endocrine therapy, cervical sympathectomy and removal of the roof of the right antrum and showed only a difference of 3 mm. in the right exophthalmos after the Naffziger operation. The left side had only a cervical sympathectomy and the exopthalmus on that side remained practically the same.

3. Mr. R. L. M., aged 40, had an hyperthyroidism without exophthalmos with a BMR of plus 80 and a pulse of 128. On the day following the thyroidectomy, the skin of his lower lids became swollen and three weeks later the globes became prominent. Four months later his BMR was —16%, pulse 66 and he had gained weight. His vision was 12/10 in each eye and the fields were normal. The skin of the lids was "puffy" but there was no chemosis and the exophthalmometer readings were 20 mm. The discs were of good color and had no hemorrhages. The veins were very dark and the ratio of veins to arteries were two to one. There was ½ D of left hyperphoria and a marked convergence weakness. He also had tenderness on looking to the left and a very slight von Graefe sign. Three years later I have been informed that he had gone to New York after my last observation and subsequently developed ulceration of one cornea and had the lids of his other eye sutured to prevent ulceration of that eye.

4. Mr. J. L., aged 50, had a toxic goiter with slight exophthalmos. A thyroidectomy had been done four months previously and for two months his eyes were more prominent and red. For six weeks lacrimation had been annoying. With weak minus lenses his vision

was right 15/10-4, left 10/10. The temporal half of both discs were slightly pale. The peripheral fields were uniformly constricted about 15 degrees. The conjunctiva of all lids and both globes were injected and there was marked chemosis of both lower lids. The exophthalmometer readings were right and left 24 mm. There was slight limitation of motion in all directions but no diplopia. The convergence was very weak. The patient was seen several times during the course of one year during which time his condition was unchanged. Four years later I have been informed his condition remains the same except that the tearing and redness is less marked.

Of these cases one could not be followed. Two have remained stationary on medical management while the fourth which was subjected to much radical surgery has remained stationary, retaining good vision a year following the surgical procedure.

The Thymus. It might be well to discuss the thymus in connection with the thyroid since there seems to be a definite relationship between the two glands.

Garré found that in 95% of all cases of malignant Graves' disease, this gland was enlarged and in such a condition signs of its hyperfunction would be masked by those from the toxicity of the thyroid.

Implantation of the thymus has been shown to cause pure cases of Graves' disease. When thymectomy is done for cases of toxic goiter, all general symptoms leave and only the eye symptoms remain.

Von Mickulicz and Rehn and Garré have shown the relation of the thymus to toxic goiter and the latter advised thymectomy first in all cases of Graves' disease. Halsted's case of exophthalmos which remained after ligating the large blood vessel to the thyroid but disappeared after x-ray of the thymus contributes further evidence of the associated function. Von Haberer reported an extreme case of hyperthyroidism unaffected by thyroidectomy which became normal after thymectomy, while Eppinger, von Haberer and Garré believed that the thymus is responsible for von Graefe's sign, the wide palpebral fissure and tearing. Souter says, "The preponderance of female cases in Parry's disease is in agreement with the admitted relation of the thymus to the gonads."

In cases of status thymo-lymphaticus, follicular conjunctivitis is seen and is located along the plica and the adjacent bulbar conjunctiva.

Hyposecretion of the Thyroid. Hyposecretion of the thyroid may lead to eye diseases which are almost insignificant while in severe cases we see the typical picture of myxedema.

In experiments on dogs, Gley and Rochon Duvigneaud found after thyroidectomy, dense corneal opacities, ectasia and superficial ulceration along with acute blepharitis and profuse lacrimation. Halsted noted conjunctivitis and blindness without fundus changes. Edmunds mentions unilateral and bilateral interstitial keratitis following complete removal in animals as does E. Fuchs while Treacher Collins reported a case of central keratitis which cleared on using thyroid extract.

Other eye conditions seen with myxedema according to E. Fuchs are choroiditis, optic neuritis, optic atrophy and cataract.

Bordley and Risley showed the relation of hypothyroidism to so-called malignant uveitis and the former mentioned that the condition had previously been noted by Demets. They did not believe that thyroid deficiency was the cause of uveitis but that the use of thyroid extract caused an accelerated metabolism and thus improved the condition. Risley too, believed that interstitial keratitis was in some way due to reduced function of the thyroid.

Wagner thought that impairment of hearing in cretinism was due to edema of the Eustachian tubes which may accompany edema of the lids. Lisser observed that the affect of homatropine lasted longer in patients with deficient thyroid function.

In 1928 Goulden reported on lens changes, loss of the eyebrows, parenchymatous keratitis and chronic glaucoma associated with mild cases of myxedema. He said, "Astygmatism seems to be fairly frequent and sometimes myopia."

Vitezslava showed the relation of thyroid to corneal diseases in cases of familial nodular degeneration with enlarged thyroid but no toxic symptoms.

Torok and Redway reported three cases of keratoconus with low metabolic rate, rarefaction of the bones of the skull, low blood calcium, and hypofunction of the thyroid. Siegrist reported nine cases and Souter that of a girl of 28 years with —11 BMR with keratoconus.

Rudemann reported, "In a group of children with progressive myopia but otherwise normal,

we found very low dextrose tolerance curve and a low BMR."

In my series of 68 cases of progressive axial (school) myopia, I found a low basal metabolic rate, half of the cases being less than minus 15% and in a surprisingly large percentage of these when they took small doses of thyroid regularly over a long period of time, we were able to arrest the progress of the myopia.

Weiss and King recorded twenty-six cases of edema of the lids of unknown origin. All of these cases were found to have a low BMR and when given thyroid were relieved of the edema and otherwise generally improved.

In myesthenia gravis with which we find a low BMR and hypothyroid symptoms we commonly believe that there is a weakness of the skeletal muscles. Abraham showed in 5 cases that as far as the extraocular muscles are concerned, this is not true, but that when testing with the phorometer, he found the inferior and superior recti muscles were much stronger and overcame far higher degrees of prism than do these same muscles in healthy individuals.

The Parathyroids. The role of the parathyroid glands in calcium metabolism and tetany is well established. There is both experimental and clinical data to support the belief that calcium metabolism is stabilized in some way by the normal function of these glands and that convulsions and tetany as well as cataracts follow their removal. Escherich found changes in the parathyroid on post mortem examination of children with zonular cataracts and bad teeth.

Hiroishi (1924) showed that cataracts developed in parathyroidectomized rats. That they developed in complete and total thyroidectomy in animals when the parathyroid was removed with the thyroid is well known. On the clinical side, complete removal including the parathyroids causes tetanic convulsions and cataracts. Five such cases seen during the past five years are here reported. Scar tissue by its contraction cutting off the blood supply to the parathyroids causes the same condition. These patients have not only low metabolic rates, tetany and cataracts, but low blood calcium and phosphorus as well. Rudemann had 10 cases of cataracts in 150 cases of bilateral thyroidectomy.

Hesse and Phelps (1913) showed definite tetany in 81% of 43 cases with lamellar cataracts and Schönbrun 8 in 41 cases.

Fischer and Triebenstein (1914) showed latent acquired tetany in 60 of 68 cases with senile cataract. There was not a single history of infantile convulsions in this series.

Kirby reported that the blood calcium was within the upper limits of normal in such cases and parathyroid extract was of no avail in treatment of this or any other type of cataract. His tissue culture experiments showed that lens tissue will tolerate any concentration of calcium without change but showed very definite changes in its absence.

In myotonic dystrophies, there are cataractous changes in the lens which resemble tetany or parathyroid cataracts. In the 38 cases reported from Tübingen, 28 had cataract which resembled the lens changes of postoperative tetany cataracts. They had low blood calcium and hereditary atrophy of the testes and sterility.

Heine had 5 cases of myotonic dystrophies with cataracts and tetany cataracts in three cases with thyroidectomies. In ten myotonic cataracts, 3 were in females.

Nordmann (1921) reported a case of myotonic atrophy with cataract in a 31 year old male and he believed there is a definite relation to tetany in cataract.

Buchanan in 1903 showed that in blue sclera and fragilitas ossium the cornea was one-half normal thickness, the anterior elastic lamina was absent and the sclera while of normal structure was proportionally thinner than the cornea. The ligaments of the joints were fibrous, elastic and dislocations were seen with these cases which are hereditary and familial.

Blue sclera is associated with hypofunction of the parathyroids and reduction of the blood sermu calcium to one-half of the normal. Wirth in 1924 studied three generations in which blue sclera was found with otosclerosis and Golden (1925) reported the same findings in a case in which he also found pigmentary degeneration of the retina.

Schiotz presents a table which is interesting:

HYPOSECRETION OF—
Parathyroid—Tetany cataract
Pancreas—Diabetic cataract
Gonads—Senile cataract
[Thyroid Parathyroid—Myotonic cataract]

HYPERSECRETION OF—
Adrenals—Ergotinin cataract
Hypophysis—Diabetes inspidus cataract
Anterior Lobe Pituitary—Acromegaly cataract

Bracketed headings now added from Grönholm (1927), who divides juvenile cataract into those due to endocrine trouble and those not.

The following five brief case reports illustrate the typical development of cataracts due to parathyroid deficiency which occur when the parathyroids are removed during the complete thyroidectomy or their destruction or impairment of function by scar tissue contraction following operation.

1. Mrs. M. C., aged 23, was first seen 7-1-26 giving a history of blurred right vision. One month before she was still able to read. She had blurred left vision for one week but was unable to read with the left eye for the past two days. When examined she read large type very slowly with the right eye. She had had a thyroidectomy seven months previously. This was followed by tetany for which she was taking calcium lactate. The best corrected right vision was 6/10-2, left 20/200. The pupils dilated to 8 mm. with homatropine. The right red reflex was good. Throughout the entire lens were fine granular opacities. There was a sheet of thin granular fawn colored opacity beneath the posterior capsule. The left lens was diffusely gray and opaque but light projection was good in all quadrants. When seen last, the left cataract was almost mature. The right was rapidly becoming opaque. A left cataract extraction was advised but refused by the patient.

2. Mrs. J. M., aged 42, was first seen 11-15-28. She had thyroidectomy two years previously and came in for progressively decreasing vision, pain in her left eye and occasional temporal headache. Before her thyroidectomy her BMR was plus 51 and pulse 118. The best corrected vision was right 6/10, left 4/10. The left lens had a dense granular diffuse subcapsular opacity with few punctate dots in the cortex. The right showed a similar but less advanced condition. The fundi and tension were normal. This patient was not followed because of absence from the city and I have heard no further report from her.

3. Mrs. H., aged 42, had had a toxic goiter removed five years previously. Her vision had failed gradually starting about one year after her thyroidectomy. Three years after the operation she had lost vision in both eyes and both lenses had become completely opaque. Cataract operation had been done on both eyes. I did not see this patient before operation. Her corrected vision was right-0.3, left 0.8-plus 3.

4. Mrs. E. R., aged 32, was seen 12-6-28. She gave a history of a thyroidectomy two years previously. Her vision began to blur 17 months after operation and had gradually grown worse so that the best corrected vision when first seen was right-3/10, left-1/10. She had had no tetany. Both lenses but especially the left had fine granular pigmented posterior subcapsular deposits involving the entire posterior portion of the lenses. There were similar but less pronounced and greyish opacities beneath the anterior capsule. There were fine granular riders in both cortices of both lenses. The fundi, fields and tension were normal. On 4-3-29 the left lens had a dense sheet of fawn colored posterior subcapsular opacity. The right lens was unchanged. The vision in the right eye had been reduced to finger counting at six feet on 2-4-30 so that a cataract operation was advised. At the time of operation the lens had become uniformly gray and only hand movements could be seen. She made an uneventful recovery and when last seen on 1-10-33 her corrected vision on the right eye was 20/10-2. The left lens has now become completely opaque. She has been advised to have a cataract operation on the left eye.

5. Mrs. E. M., aged 44, first seen on 11-1-28 said that she had had a thyroidectomy eleven months ago for toxic goiter. Her BMR was plus 48. Following operation the patient developed tetany and signs of parathyroid deficiency and the BMR was —18 per cent. She was given thyroid gr. vi and four drams of calcium lactate daily. Her vision gradually diminished and on her first visit was right 1/10, L 8/200. Corrected right vision—3/10-1, left—6/10. Then lenses showed typical gray, fawn colored sheet of opacities beneath the posterior lens capsule. When seen on 6-7-29 her corrected right vision 8/200, left 2/200. The lens opacities were more diffuse and she was advised to have a right lens extraction. She failed to return to the clinic, until 5-15-33 when her R lens was completely opaque and the left subcapsular sheet of opacity more dense. The anterior cortical riders had become more numerous. The nucleus was thin and clear. The tension was normal. She still had occasional attacks of tetany in spite of the fact that she was taking thyroid extract gr. vi and calcium lactate drachms 3 daily. She was advised to have the R cataract removed.

Of these five cases only four were seen before the cataract extraction so that the type of lens changes could be described. Of the remaining four cases two had tetany following their thyroidectomies. Two developed their lens changes without any previous tetanic convulsion. All had lens changes appearing first beneath the posterior capsule. These were a light tan or fawn color in which a greenish tinge could at times be seen. This opacity appeared first in the pupillary portion of the lenses and later involved the entire posterior region. The dotlike cortical opacities which are seen first in animals following complete thyroidectomy do not appear clinically until a later date. I have not seen the subcapsular opacities in experimental animals. These cataracts go on to maturity in a comparatively short time and are operated on with as good results as are seen in mature senile cataract.

The Pituitary Gland. Whether pure hyper,

hypo or dysfunctions of either lobe of the pituitary gland can cause scotomata or other field defects is a question. Benedict is of the opinion that toxicity in pituitary disease may cause changes in the optic nerve and secondarily field changes while others are of the opinion that field changes can all be satisfactorily explained by the mechanical pressure theory.

Haden recently reported a classical case of hemisection of the chiasm for removal of a pituitary tumor. That the visual disturbances were due to deficient pituitary secretion was shown by the marked improvement when glandular therapy was employed and the severe impairment when it was discontinued.

Elsberg and King's case of pituitary deficiency with field defects which were altered after decompression showed marked enlargement of the fields after four months of treatment with pituitary extract.

Tumme's case of impaired vision, limitation of fields and pale discs had normal fields and vision after two years while getting pituitary and thyroid extracts on alternate days.

DeSchweinitz and How reported a case with pale discs, right paracentral scotoma and later showed bitemporal hemianopsia, impaired central vision and enlarged sella turcica which after 2½ years of thyroid and pituitary extracts had normal fields and vision.

The typical field picture of bitemporal hemanopsia due to enlargement of the gland with pressure on the chiasm is familiar to us all.

The question of field changes in pregnancy is in debate, but Findlay told me recently that he found field changes in all cases examined after the seventh month when the gland enlarged sufficiently to press on the chiasm. X-ray findings of the sella in pregnancy are normal.

Whether pituitary headache is due to increased secretion or pressure and traction is in dispute and the x-ray findings of the sella are variable.

Dr. Cushman has found field changes in such cases and noted improvement with gland therapy and x-ray.

The linking of the pituitary gland with Leber's optic atrophy, migraine, polydactylism and pigmentary degeneration of the retina is still unproved and this gland's relation to pigmentary changes in the skin is also in dispute. Treatment of these conditions with pituitary extract has not improved any of these conditions.

The Pancreas. The pancreas and its product insulin play an important role in normal metabolism. Due to its disturbances, we may see the usual retinitis, optic neuritis and cataracts. Less frequently occurs iritis with alteration in the retinal epithelium of the iris, lipæmic retinitis, paralyses of the extrinsic muscles, paralyses of the intrinsic muscles, and changes in the refraction of the eye. The ocular tension is low in diabetic coma and injections of insulin may alter both the systemic blood pressure as well as intra-ocular pressure.

The Suprarenals. The suprarenals or adrenals by their secretion may alter blood pressure and intraocular pressure. Knapp showed that adrenalin dilated the pupil in eyes with prodromal glaucoma, this susceptibility is present before any other signs of the disease. Imre has written that this adrenalin reaction along with Koeppe's wandering pigment can be looked upon as a sure sign of pre-glaucomatous condition. The suprarenals have been shown to have some influence on pigmentation of the skin as is seen in cases of Addison's disease. Their dysfunction produces pigmentation of the skin of the lids and of the conjunctiva as was first shown by Loewi. Uthoff described keratitis seen in cases with Addison's disease. However, ovarian disease and thyroid disease also cause pigmentary deposits and even the pituitary is said to be responsible for pigmentary changes. When pituitrin causes such changes, it is probably due to the inclusion of the pars intermedia when making the preparation.

The Gonads. The relation of the gonads to the eye is not well known. Iritis cases do occur in women with attacks showing a definite relationship to the menses or climacteric. Abderhalden showed that extracts of testes and thyroid affect the pupillary reaction.

Siegrist believes that senile cataract bears a very definite relationship to the gonads, "just as definite as does diabetic cataract to the lack of insulin."

Nordmann reported a case in which bitemporal hemianopia followed bilateral oöphorectomy, but this is an isolated case and no one has added anything to support it.

Edema of the lids, tearing and conditions re-

sembling vernal catarrh follow castration in boys. The condition is helped by thyroid extract.

Glaucoma and the Endocrines. The relation of glaucoma to general diseases had been and is being studied. There seems to be some relation to the glands of internal secretion. In toxic goiter the intraocular pressure is unstable and the dilatation of the pupil in this condition has been shown to have definite influence on cases of incipient glaucoma.

Ovarian extract and corpus luteum cause a rise in blood pressure and indirectly cause a rise in intraocular pressure. Intraocular pressure is low during pregnancy and hyperfunction of the hypophysis. The pituitary gland we know from Erdheim and Stumne's report, is enlarged in pregnancy. Conversely, hypophyseal tumors with lessened secretion of the gland has caused increased intraocular pressure. Suprarenal extract, by increasing blood pressure, influence glaucoma. On the other hand, local application of the extract may decrease intraocular tension. Insulin causes a drop in tension in glaucoma. The eye tension is usually low in diabetes. In osteomalacia the tension of the eyes is less than normal even lower than after death.

Imre studied the internal secretory mechanism in glaucoma and concluded that "Patients with glaucoma in an overwhelming majority of cases have an endocrine disturbance and organotherapy has a decided specific effect on the eye tension in these persons."

Migraine. Migraine seems to be related in some way to the endocrines. It is seen in cases with instability of the thyroid and in cases of hypophyseal dysfunction. Spasm of the retinal blood vessels and signs of spasm in the vessels of the occipital lobe have been noted during attacks. Perhaps some of the glands which cause vasoconstriction and increased blood pressure are responsible. We know that attacks often occur at the time of the menstrual periods and many women cease to have attacks after the climacteric.

The Lacrimal Glands. We have not been accustomed to include the lacrimal glands with endocrines. We may have to place them in such a category.

Recent researches of Michael and Vancea on the internal secretion of the lacrimal glands lead them to conclude that the gland produces a substance which is a powerful vasoconstrictor, and cardiotonic. It stimulates uterine musculature, respiration, urinary secretion and reduces the metabolism of sugars and fats. They also report that extract A accelerates and B inhibits oxidation. These produce polyglobulism with leucocytosis, reduce the resistance of blood cells, and metabolism of calcium and phosphorus. This occurs at the same time with a reduced hydrogen ion concentration and diminished water metabolism in the tissues. The extracts also accelerate cicatrization of wounds and stimulate growth. This work appeared about a year ago and is still incomplete and unconfirmed, but is certainly interesting.

From this short resume of the existing knowledge of the subject and our personal experiences with endocrine disturbances, we can only conclude that there must be an inter-relation or balance between all the endocrines, and that any disturbance of the balance leads to symptoms which need not always respond in the same way because of the other general factors present in the individual patient.

122 S. Michigan Ave.

DISCUSSION

Dr. Beulah Cushman, Chicago: Congratulations are due Dr. Bothman for bringing this important subject to us in such a clear and concise manner. It seems that sometimes we can almost forget in the practice of ophthalmology that the eyes are really a part of the body, and a paper is appreciated that emphasizes the relations of general metabolic conditions to the ocular findings.

Dr. G. W. Crile, in an address before the Chicago Medical Society, recently spoke of the difference in the relative size of the glands of internal secretion in animals up through the scale of development, the thyroids and pituitary becoming larger in man in proportion to the adrenals, the adrenals being much larger accordingly in the animals. This difference he suggested may account for the development of the intelligence, and it also may account for the hyperthyroidism, hypertension and the vascular diseases which are so common in man. It also may be some of the reasons that experimental animals give reactions which cannot be duplicated in man. So the clincal studies retain their importance.

In addition to the clinical studies made by Dr. Bothman on the thyroid, I want to report a study made of headaches in the past six years found in ten cases to be due to functional disturbances of the pituitary. These headaches are characterized by periodic attacks which may be frontal or occipital and referred to any part of the head. They occur most frequently in women, and are often instituted during adolescence, pregnancy or at the menopause. The attacks may last

for a few minutes or for forty-eight hours or longer, and frequently are present on awakening in the morning. Nausea is seldom present. In most of these cases the attempt to use the eyes for near work was distressing, and simulated ciliary spasm. One patient had not been able to use her eyes for near work for over twenty years without precipitating a headache. The study of the visual fields in this patient suggested some chiasmal pressure. The internist reported some of the common findings of a hypopituitarism and with the administration of antuitrin "S" the headaches disappeared. She reported recently that she has had no headaches and can use her eyes with no discomfort if she continues to take the antuitrin twice a week.

Another patient, a telephone operator 33 years of age, mother of four normal children, complained of premenstrual frontal headaches which had been present for fifteen years, gradually becoming more frequent until they were almost constant. The pain increased in severity with the use of the eyes for near work. She had always been very strong and able to care for her four children and work for the telephone company until the previous year, when she began to suffer from severe fatigue after any simple work. A headache seemed to be precipitated by fatigue. She was extremely irritable. An hysterectomy had been done seven years previously for fibroids. The general physical examination and sinus plates were negative. The pupils and fundi were normal. The visual fields showed a slanting off of the superior temporal quadrants for color, and there was no constricton of the form fields. There was a relative central scotoma for one-half degree green. Roentgenogram of the sella was normal. She reported improvement after the roentgen picture was made, and with pituitary extract given by the internist in the form of Antuitrin "S" for one year, she was free during the medication and has remained so since that time.

All findings in the ten cases point directly to the pituitary gland as the common factor. The cases fall apparently into three groups, first, those with symptoms due to simple distension of the capsule during the physiological hypertrophy, and second, those, with symptoms due to dysfunction, and a third type combining symptoms of distension in a small sella and dysfunction of the hypophysis.

In summarizing, certain periodic attacks of headaches and discomfort of the eyes simulating ciliary spasm may be due to dysfunction of the organically sound pituitary gland or the distension of its capsule by physiological hypertrophy; also, the majority of the visual fields show a contraction of the superior or temporal quadrant for color and varying changes in the form fields.

Dr. Harry Woodruff, Joliet: I would like to say a word about one part of this subject, the question of the treatment of myopia. Probably all of you are familiar with the suggestion of Mayer Wiener, regarding the use of drops of adrenalin in the conjunctival sac in myopia. That attracted my attention some time ago, and then later Dr. Bothman's observations on the low metabolic rates in myopia. While I can offer nothing in the way of a positive statement regarding the subject, I do feel myself that the ophthalmologist is neglecting a case of myopia if he fails to take into account the possible lack of endocrine secretion in myopia. I have lived long enough to see cases of slight myopia develop into the higher grades. I have one case in mind, a teacher in school, who had, I remember, the habit of pushing the lenses of her glasses close to the eyes to increase the power. Many years afterward when I saw her professionally she was blind, with glaucoma, but I feel sure that the original trouble was gradually increasing myopia.

It is a great step forward in the treatment of myopes if they can be said to have some glandular dysfunction as a basis. It is not the only factor, of course. I started the use of adrenalin drops and have used them more or less consistently for some time, also having basal metabolic rates made on these patients as frequently as possible. I do not confine this treatment to children, but also give it to young adults. There has always been a considerable proportion of minus B-M-R —considerably more than plus. We are told that a variation of 15 degrees is not significant. I am not sure about that. The proportion would run something like this—in sixty cases fifty would have a minus rate, not high minus, all of them, but minus. In these cases which have a minus rate below 15, I had them take thyroid extract. I do think I have secured results with the use of adrenalin drops in the eye, and where the minus rate was below 15, by the use of thyroid extract also.

I feel that I am safe in making the statement that you can do a lot more now to prevent the progress of myopia than you could formerly. Myopia is sometimes classified as progressive, but of course patients do not start life with myopia, so that all cases are or have been progressive at some time. I presume it is a common experience to have myopic patients who do not develop myopia until they reach high school age. They never reach the high degrees of myopia, but it is an advantage to have as little myopia as possible. Cases that begin early in childhood, when the child first begins school, are dangerous. It is not always easy to get the co-operation of the parents in having examinations made yearly or twice yearly, with the results recorded, but where it can be done I believe the extreme cases of excessive myopia can be a thing of the past.

Dr. Irving Muskat, Chicago: We must admit that the endocrines have a decided influence on the general health, and presumably on the general system and some inter-relationship between themselves. We also must admit that the final note has not been sounded as to the relation of these glands to other organs outside of some definite facts. One of the most interesting things is the progressive exophthalmos that sometimes results after the removal of the thyroid gland for exophthalmic toxic goiter. Not long ago there was a case in Chicago which showed such a progressive exophthalmos after thyroidectomy for exophthalmic goiter. Much discussion ensued regarding the therapy and the progressiveness of the exophthalmos. I do not know what finally was decided nor the outcome of the case but it has

drawn much attention to this subject. About a year ago I had occasion to review the literature on this subject and one author enumerated all the references and reported a case of his own. In that article he showed that thyroid extract and adrenal extract had been used, but none of these drugs or procedures have been of avail in arresting the condition. Anterior pituitary was used for quite a while with maximal recession of the exophthalmos.

Regarding Dr. Bothman's work on children, I have wondered what his idea is regarding the basal metabolic rate in these cases. His work was done in children, and he reports a negative or minus metabolic rate. I should like to know whether most growing children do not tend to have a minus metabolic rate.

Much has been written regarding migraine. There is no doubt that a fair percentage are due to allergy, but just what role the endocrines play is still a matter of conjecture.

Dr. Elias Selinger, Chicago: Regarding the subject of progressive myopia. A good deal has been written about this, particularly about the etiology and treatment. Many cases of school age myopia stop spontaneously. Domez wrote that the pathology was in the under development of the ciliary muscles, and his idea was to stimulate the ciliary muscles by eserine to increase their development. Others held the theory that too much accommodation was being exerted and they treated patients with atropine over a period of years, with equally good results. Another theory is that myopia of the progressive type is probably secondary to increased intraocular tension, and the advocates of that theory say that the reason we get an increase in the antero-posterior diameter of the eye is that the sclera in childhood is more yielding, therefore an increase in the intra-ocular pressure stretches the eyeball rather than causes a recession of the lamina cribrosa as in the adult. Heredity is an all important factor in the development of myopia but general causes, and among them disturbances of the endocrine system, need to be carefully investigated before definite progress in the problem of myopia can be looked forward to.

Dr. R. H. Woods, LaSalle: I would like to add one thought to this question of progressive myopia. There is a close relation between convergence and accommodation, and we should investigate the subject a little further in progressive myopia. I hope to be able to report in another year some work I have been doing along this line.

Dr. W. A. McNichols, Dixon: I am very thankful that they did not feed me thyroid extract when I was a youngster even though I did have a mild case of progressive myopia. I went to a good oculist and he fitted me with glasses and about a certain age my myopia ceased progressing. I think Dr. Bothman's paper is very interesting, but I think we should not be too enthusiastic about giving thyroid, especially in children who may have a mild degree of myopia that progresses.

Personally I have thought that the sexual development has something to do with myopia. It comes on children 6 or 7 years of age and progresses up to the age of 20, and tends to slow up after that. There is no way to prove it, but I have always thought there was a connection.

Dr. Louis Bothman, Chicago (closing): I wish to thank all the members of the Section for their discussion, particularly Dr. Cushman. We should be very grateful to her for the preview of the paper she is to give at the American Medical Association Meeting in Milwaukee.

Dr. Woodruff opened the myopia discussion. I was glad to learn that he has found low basal rates in his progressive myopia patients. In the paper as presented there were about four lines about my own work on myopia, and I did not mention anything about dosage of thyroid at all. Dr. Novak's figure of 5 grains was from the case report of the medication by the internist in a patient with postoperative tetany and cataract. I said that in the sixty-eight cases previously reported the verage basal metabolic rate was minus 15 per cent. and the myopia of most of these patients I had been able to keep on thyroid extract had not progressed. This work was done on school myopia (the axial myopia) and I tried to get the patients with as low degrees of myopia as possible, in order to see if I could check it while the myopia is still low. Someone just stated that myopia usually ceases to progress when it reaches 3 diopters. That is true and is the reason why I am particularly interested in getting cases with low degree and seeing if I can check these cases by the use of thyroid extract. The study is still in progress and is not yet ready to be reported.

Dr. Muskat remarked that all children have a minus basal metabolic rate. I ran a series of twelve or fifteen cases with hyperopia in which one had a rate of 0, one had minus 3 per cent. and the others had plus rates. It may be that they were exceptional, but I do not think so. Dr. Novak said we can tell by other signs if there is hypothyroidism. That is true to a certain exfent. I had observed that many myopic children were short of stature and overweight, but some were tall and thin and this group gained weight while taking thyroid extract. Sluggish mentality does not always accompany low metabolic rates. Two children in my series with rates of minus 23 per cent. and minus 25 per cent. are at the head of their classes.

It is surprising the difference the use of thyroid extract makes in children of this type and how much better they get along in school after taking thyroid. None of these cases is of the malignant type of myopia, and I do not believe thyroid has any relation to that type of myopia more than any of the other glands of internal secretion. The basal metabolic rates in malignant myopia in adults were all within a range of plus 7 to minus 5 per cent. About half the cases were minus and half plus. Dr. Mellin spoke about a patient of 22, and mentioned what Dr. Devney had said. The reason for her answer was that the study of Drs. Brown and Kronfeld showed that axial myopia ceased to progress at the age of 20; the malignant form went on. For that reason Dr. Brown is of the opinion that it does not

make any difference as far as the progress of myopia is concerned whether they wear glasses or not after the age of 20.

Dr. McNichols spoke of the relation of the sex organs to myopia. I have no evidence to support or refute that statement but in my series of 68 cases reported there were twice as many little girls as boys, and in the other series which I am now studying and have not yet reported there seems to be a preponderance of females over males. The fact that myopia occurs in both would make us consider well before concluding that the gonads were responsible. Even in this type of school myopia there is usually some family history of myopia. It is not purely an endocrine disturbance. I believe there must be some inherent, scleral weakness, or what you will, that is partly responsible and the endocrine disturbance is chiefly a contributing factor. Cases of particular interest to me are those which have previously been refracted and an hyperopic refractive error had been found. When these become myopic I am most interested.

CHRONIC PYURIA IN CHILDHOOD*

JOHN A. BIGLER, M. D.

HIGHLAND PARK, ILLINOIS

Infection of the urinary tract with the accompanying pyuria is one of the common disorders of infancy and childhood. Everyone dealing with these young patients must encounter such infections whether or not they are so recognized. Acute cases of pyuria are relatively simple infections, but not so the chronic case, which because of the underlying pathology is more serious to the life of the patient and requires treatment other than medical in almost every instance.

The term acute pyuria is used to include those urinary tract infections which completely clear up in from four to six weeks with or without medical treatment. The term chronic pyuria as used here includes not only those cases with frequent recurrences of the urinary tract infection but also those cases in which the infection has been present for longer than four to six weeks. It further includes cases with urinary statis due to obstruction which, while they may be recognized early during the first acute phase of the infection, would become chronic if allowed to persist without the correct diagnosis and treatment.

A probable diagnosis of pyuria can often be made from the clinical symptoms, but a positive diagnosis only by examination of the urine. Any given case of chronic pyuria may and often does resemble at first an acute pyuria when the initial symptoms are considered. The amount of pus in the urine and the clinical symptoms rarely give any indication of the site of the infection. The diagnosis depends upon the presence of pus in the urine, the clinical symptoms, the duration of the pyuria, the findings upon physical examination and lastly upon a complete urologic investigation. These points will be taken up in more or less detail, as will the types of urinary tract lesions which serve as the basis for the chronic infection.

Age and Sex. Cases of chronic pyuria occur about equally in both sexes and may be found at any age from birth on.

Clinical Symptoms. The clinical symptoms are usually the same in the acute and chronic cases of pyuria at the onset of the infection. It is practically impossible to tell early which cases will become chronic. The symptomatology varies somewhat with the age of the patient. In infants only general symptoms are present. There is usually an acute onset with high fever and at times a convulsion. The temperature often reaches 105 and may fluctuate over a wide range. Only occasionally the course may be afebrile. A chill may accompany the high fever and is nearly pathognomic of a pyuria, as it so rarely occurs in other childhod diseases. Pallor, restlessness, irritability and crying, the latter especially upon urination, are of frequent occurrence. The above general symptoms may be those of any acute infection. In the older child there may be such local symptoms as dysuria, urgency, frequency and often tenderness over the bladder and kidneys. When cystitis is present, the local symptoms are usually more pronounced than when only the upper urinary tract is the site of the infection.

In chronic pyuria the above local and general symptoms may subside and then recur again at irregular intervals, although the urine always contains numerous pus cells. There may be long periods when only a low grade fever is present. In cases in which there has been marked destruction of kidney tissue, the symptoms of nephritis and even uremia may occur. At times there are no symptoms which would lead one to suspect a urinary tract infection.

*Read before Section on Medicine at Peoria, May 17, 1933.

Physical Examination. A physical examination should always be carefully performed. An abdominal tumor mass should lead one to suspect the presence of some obstructive lesion in the urinary tract. A supra-pubic tumor which disappears upon emptying the bladder, which is associated with incontinence and dribbling, is found with a bladder neck or a posterior urethral obstruction or with a cord bladder. It might be well to add here that a meatal ulcer may cause a dysuria and a full bladder. It occurs in the presence of an ammoniacal diaper with or without the characteristic rash. A drop of cocaine solution on the meatal ulcer will give immediate temporary relief from the dysuria and immediate emptying of the bladder. A pyuria is never present and these patients with meatal ulcer should not be sent to the urologist. A tumor in one or both kidney regions may indicate a hydronephrosis, a kidney tumor or polycystic kidneys. Hydro-ureters are rarely palpable. Enlarged, tender, palpable kidneys may mean a pyonephritis. When an anomalous ureter empties outside of the vesical sphincter, there is constant wetting of the diapers or clothes. So-called renal infantilism or renal dwarfism may be suspected by the physical make-up of the patient.

PATHOLOGY

The lesions which cause the chronicity of the infection can be divided into two groups: the non-obstructive and those with obstruction and urinary stasis.

Non-obstructive group: Tuberculous infection of the urinary tract is not a common cause of pyuria in children. When present it is exceedingly chronic without marked clinical symptoms and is always secondary to tuberculosis elsewhere in the body. The tubercle bacilli are carried by the blood stream to the kidneys from where the infection spreads to the lower urinary tract. A tuberculous infection should be strongly suspected in any case of pyuria in which the cultures of the urine are sterile. The tubercle bacilli may be found by staining the sediment of the urine or by guinea pig inoculation.

Calculi in the urinary tract are practically always accompanied by a hematuria at some time. Pyuria will occur sooner or later and will become chronic. The calculi may be located in the pelvis, ureter or bladder and may be single or multiple. Renal colic varying in severity is frequently present. The infecting organism may be the colon bacillus or any of the pyogenic organisms. Urinary calculi are found fairly commonly during childhood.

Chronic pyelitis or cystitis may occur when the infection becomes deep seated in the tissues causing some degree of inflammatory hyperplasia. The ureters may also be involved. The bacillus coli or the pyogenic organisms are usually present in the urine. The clinical symptoms are usually marked at the onset, subsiding and recurring at irregular intervals. There may be an associated pyonephritis from an ascending infection. In other cases a pyonephritis may develop from a blood stream infection. The course at first may be very stormy with the pyuria subsiding only with the healing of the kidney infection.

Kidney tumors and paranephritic abscesses are fairly common during childhood but are rarely accompanied by a pyuria.

Urinary Tract Obstructions: The frequency of urinary tract anomalies has been brought out in the reports of both the urologists and the pathologists. The incidence as given in necropsy series varies between two and thirteen per cent. Hurt states that some type of urinary anomaly can be expected in about five per cent. of all babies born. From necropsy studies it is now quite firmly established that most of the obstructive lesions as encountered in children are congenital in origin. One of the most common causes of chronic pyuria is urinary stasis due to obstruction somewhere in the urinary tract. The dammed up urine exerts a back pressure, which is commensurate with the degree of obstruction, producing dilatation above. Besides producing structural changes the dammed up urine offers a fertile culture media for infecting organisms. A chronic deep seated infection develops with usually a pyonephritis whether the route of the infection is by way of the blood or is of the ascending type. Although the obstruction is present at birth, infection and pyuria may not develop until years later. The following congenital lesions are frequently encountered:

Hydronephrosis due to narrowing at the pelvo-ureteral junction or to the pressure of anomalous vessels where they cross the pelvis or ureter. The hydronephrosis is usually unilateral but it

may be bilateral. There is hypertrophy and dilatation of the kidney pelvis with pressure atrophy of the kidney. The kidney tissue may become so thinned out as to be only a shell with dilated tubules and considerable fibrosis. The large hydronephrotic kidney may be palpable.

Hydroureteronephrosis due to narrowing of the ureter in the region of the uretero-vesical junction. It may be unilateral or bilateral. Besides the hydronephrosis there is also dilatation of the ureter with tortuosity due to its increased length. There are also certain cases of bilateral hydroureteronephrosis with a golf-hole-like ureteral opening in which no obstruction is found even at the bladder neck or in the urethra. These are described as being due to atony or neuromuscular dysfunction.

Bladder neck and posterior urethral obstructions are common and occur practically only in boys. Besides the bilateral hydroureteronephrosis which is always present there is hypertrophy and dilatation of the bladder and often bladder diverticula. The obstructions can frequently be diagnosed or suspected because of the suprapubic tumor and the incontinence and dribbling. The urine is usually normal until infection takes place, then there is a marked pyuria. It is in these cases that bladder catheterization is a hazard because if infection is not already present it will invariably follow and a pyuria develop within forty-eight hours. The bladder neck obstructions are usually due to a median bar. They are not often encountered under one year of age because the obstruction seems to increase with age, only producing symptoms when it becomes well established. The posterior urethral obstructions are due to valves or a diaphragm in the region of the verumontanum. The obstruction is usually well established before birth with the result that these cases are usually encountered in very young infants. Even at the time of birth such marked structural damage has taken place in the upper urinary tract that the prognosis is poor. After infection and pyuria occur, the outlook is often hopeless because of the pyonephritis. A cord bladder may produce the same changes as above and can be differentiated by the neurological findings and the presence of a spina bifida.

Anomalous ureters with and without obstruction at their distal end may be the seat of the urinary infection. The anomalous ureter may join the other ureter from the same kidney, it may enter the trigone in the normal position or it may empty outside of the vesical sphincter.

Acquired obstructive lesions producing urinary stasis also occur but they are less common than the congenital type. Varying degrees of hydroureteronephrosis may be produced by the pressure of abdominal tumors on the ureter, by the growth of kidney tumors, and by the presence of bladder tumors which are rare. Urinary tract calculi may by their presence in the pelvis, ureter or bladder produce obstruction with dilatation above. Acquired strictures occurring anywhere in the ureter will produce varying degrees of hydroureteronephrosis. They are not as commonly described in children as in adults. We have encountered no cases of stricture that could not be explained on a congenital basis rather than on an acquired basis.

Comment

In general it can be said that the usual case of acute pyuria runs its course in about from four to six weeks with or without medical treatment. If after this time the pyuria persists and medical treatment has been adequately carried out, urologic examination is indicated. If there have been recurrent attacks of pyuria, the same holds true. The presence of an abdominal tumor mass in the region of the bladder or kidneys accompanied by a pyuria, no matter what its duration, should have urologic study immediately. One should not depend upon the presence or absence of clinical symptoms but upon the presence or absence of pus in the urine in judging each case. The urine should be examined in every unexplained fever and to advantage more than once. In fact it should become just as much a routine part of the examination of the sick child as is the examination of the ears and throat. If a pyuria is present, then future examinations are necessary. These should be continued until the pus disappears and then during the course of the next year. Helmholz goes so far as to say that no case of pyuria should be considered cured without negative cultures of the urine. It is only by the recognition of a recurrent, prolonged or persistent pyuria or at times by the physical examination that the chronic cases can be recognized and the proper investigation undertaken

to determine the underlying pathology and hence the correct treatment.

These patients with pyuria do not seek out the urologist but they go to the medical man. This puts the problem of diagnosis up to the general practitioner or the pediatrician where it belongs. They must recognize the type of pyuria present and they must decide which cases are to go to the urologist. Certainly every case of pyuria should not be sent to the urologist but there is no excuse for allowing a case of pyuria to drag on for months or even years without giving that patient the benefit of a complete urologic examination. At the present time the age and the sex of the child is no bar to such a complete investigation. The new instruments devised for even small infants and intravenous pylography tend to take away the hazards which were formerly present.

THE TREATMENT OF PULMONARY ABSCESS*

CARL A. HEDBLOM, M. D.

CHCAGO

There seems to have been a very considerable increase in the incidence of pulmonary abscess during the past few decades. The literature now contains well over 3,000 recorded cases, about 90 per cent of which have been reported since 1900. There seems to be no doubt as to the increase of the post-operative type. About one-quarter of a series of 2,458 cases collected from the world's literature followed operation; in this country the proportion in relatively large series of individual reports has been from one-third to two-thirds.

Aspiration of infection is probably by far the most frequent cause. In over 40 per cent. of 528 cases studied by the author the abscess was a post-operative complication.

In more than half of these the operation was a tonsillectomy and in nearly another quarter of the cases some other operation about the mouth.

Among 657 cases following operation as reported in the world's literature the operation was a tonsillectomy in 360 or 54.8 per cent. While most of them are probably aspiratory, some no doubt are embolic.

The obvious preventive measures against aspiratory post-operative abscesses are oral hygiene, avoidance of operation in the presence of acute tonsillitis or pharyngitis, during which time the organisms are of greatly enhanced virulence; measures to prevent infected blood and secretions from entering the bronchi by preserving the cough reflex through light general or circumscribed local anesthesia; position of the patient such that the secretions will gravitate away from the trachea; suction and reasonably skillful, speedy operation. Bronchial obstruction may be relieved by coughing (which should therefore not be unduly inhibited by morphia, etc.), by carbon dioxide inhalations, and, in case of definite evidence of aspiration of blood, vomitus, or foreign body, by prompt bronchoscopic removal.

In a minority of cases, abscesses are doubtless due to blood-stream infection. They may be prevented in some measure perhaps by strict asepsis, by avoidance of trauma during operation, by clean-cut ligation of bleeding vessels rather than by mass ligatures, and by limiting mobility of the operative field.

Prompt, effective treatment of subphrenic abscess, osteomyelitis, infected venous thrombosis, etc., leading to pulmonary involvement by lymphatic extension or secondary to pyemia, may also be classed as preventive measures.

The Treatment of Pulmonary Abscess. As judged by the medical literature, there is greater divergence of opinion as to treatment now than at any time since Hippocrates. Among the great variety of methods recommended may be mentioned prolonged bed rest, "thirst cure," postural drainage, vaccines, drug therapy (from emetin to 30 per cent. alcohol intravenously), bronchoscopic suction, lavage, medication and dilatation, pulmonary compression by pneumothorax, phrenic neurectomy, pneumolysis and extrapleural thoracoplasty, thoracotomy drainage, pneumolysis and cautery drainage and extirpation of the diseased tissue by cautery or lobectomy. The evil lies not in the multiplicity of methods as such, but in the tendency to indiscriminate and injudicious and persistent use of one method in all types of cases.

A consideration of the extraordinary varia-

*From the University of Illinois, College of Medicine, Department of Surgery.

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tion in type and virulence of the causative organisms singly or in symbiosis, in infection resistance ratio, in pathological anatomy, and in complications and in the general condition of the patient, lends emphasis to the statement that to be rational and effective, treatment must be individualized.

The fundamental principle in treatment is adequate drainage. A second principle of treatment is obliteration of the cavity in case that does not occur spontaneously following drainage. Supportive measures, including drug therapy, are of great importance as an auxiliary to drainage. Exceptionally, drug therapy may be of primary importance, as in the use of emetin in amebic abscess.

The avenue of drainage may be by way of a communicating bronchus or through a thoracotomy opening in the chest wall. Posture, bronchoscopy or compression therapy may be of aid to bronchial evacuation. The indications for these methods will be discussed first, and later those for thoractomy drainage and extirpation.

Postural Drainage. When an abscess perforates into a bronchus, the size of the communicating opening and of the bronchus in relation to the abscess largely determines the prospect of adequate bronchial drainage. Coughing may be effective in keeping the cavity empty. Probably 10 to 15 per cent. of cases of abscess are cured spontaneously in this way. Gravity drainage, made possible by having the patient assume the position most effective in his individual case would materially increase the percentage of spontaneous cures.

The prospect of a cure in any given case will depend on the virulence of infection, on the pathological anatomy of the abscess and on the presence or absence of secondary pathological changes. In the presence of an infection of mild grade there is no immediate necessity for thorough drainage; if the infection is virulent, as in case of a gangrenous abscess with sequestration, the urgency is great. An abscess situated centrally and opening into a bronchus by a wide stoma lends itself well to postural drainage; one situated in the parenchyma and communicating with a bronchus by a long, tortuous sinus, is not likely to be benefited. An acute abscess cavity will obliterate when well drained; a chronic abscess with greatly stiffened walls may drain well but is likely to persist. Multilocular cavities are unlikely to drain well; the honeycomb type will not. Secondary bronchiectasis and the "lattice" type of cavity require more than drainage for a cure.

Bronchoscopic Instrumentation. Aside from its indispensable use in the recognition and removal of foreign bodies and in the diagnosis of bronchogenic growths with secondary abscess formation, bronchoscopic removal of granulation tissue and dilatation of stenosed openings into the abscess cavity may make postural drainage adequate. Favorable results are reported also from bronchoscopic aspiration and lavage, but it seems only reasonable to suspect that many cases reported cured by this method might have gotten well by postural drainage. Heuer writes that under the best conditions the results of bronchoscopic treatment are no better than from postural drainage. The most successful bronchoscopy requires the specialist's skill and experience.

Collapse Therapy. (a) Pneumothorax collapse: Generally speaking, this method of treatment has little to recommend it, and is open to serious objection. In peripheral abscess with associated dense pleural adhesions, collapse of the diseased portion of the lung is impossible. If adhesions are limited and friable they may tear, producing perforation of the abscess into the free pleural cavity, which is a very serious complication. If the abscess is in the parenchyma of the lung communicating with a bronchus by a narrow channel, the collapse of the lung may distort and narrow the drainage channel. The only type of acute abscess in which it is reasonably safe is that which is centrally situated and is already draining adequately. It would seem probable that the majority of abscesses reported as cured by pneumothorax therapy would have gotten well by spontaneous or postural drainage. There is the more valid objection to pneumothorax collapse that if it fails to accomplish its purpose, it is impossible to institute thoracotomy drainage until the lung has completely re-expanded and until adhesions have formed, which usually requires several weeks.

(b) Phrenic neurectomy: This procedure possesses the advantage over pneumothorax that it does not involve the danger of perforation of

the abscess into a free pleural cavity, and does not interfere with later thoracotomy drainage if that should seem necessary. Furthermore, if the drainage tract remains unobstructed, it will increase the effectiveness of coughing, in that the lung is more effectively compressed during the expiratory phase of coughing, and it may serve partially to collapse a cavity—particularly one in the lower part of the lung. It may also be effective in checking hemorrhage. On the other hand, drainage may be impeded by the resulting distortion of the drainage tract.

(c) Thoracoplasty: A complete extrapleural thoracoplastry is never indicated in the treatment of a single abscess of limited extent. A partial thoracoplasty involving removal of very long segments of the upper ribs may effectively collapse an apical cavity, and a resection of very long segments of the lower ribs will result in a partial collapse of the base of the lung, but the more rational and conservative procedure is a thoracotomy with drainage.

Recently partial thoracoplasty has been advocated for improving bronchial drainage. Fixation of the lung is first secured by preliminary rib resection beyond the borders of the cavity and packing gauze against the parietal pleura. At a second operation several more ribs are excised. This involves a more extensive rib resection than is often necessary; it is done during the stage of the illness during which the patient is often too critically ill to withstand it, and such rib resection may lead to interference with the cough reflex and retention pneumonia. In case of a peripherically situated abscess, drainage may be hindered rather than promoted by such a procedure, and the most direct, safest exit for the pus is through the chest wall. If the abscess is central, a very extensive resection would be necessary to effect its collapse. In my opinion this is never advisable as a drainage procedure.. Secondary thoracoplasty may be necessary after drainage to obliterate a stiff walled cavity.

In case of secondary pleuritis and marked pulmonary fibrosis effectively masking all localizing findings and with secondary bronchiectasis, an extensive thoracoplasty is to be considered and may result in sufficient improvement, so that nothing further is indicated. If symptoms persist, a secondary extirpation or lobectomy is simplified in some respects and made less hazardous by the preliminary thoracoplasty. Thoracoplasty, however, involves a very considerable mortality, chiefly from pus retention.

Thoractomy Drainage. The expressed consensus of opinion seems to be that if bronchial drainage, promoted by posture, bronchoscopy, etc., proves inadequate after eight to twelve weeks' trial, thoracotomy drainage should be instituted. A more rational working rule is to continue with the more conservative methods if and as long as the patient improves definitely and progressively; to establish thoracotomy drainage in eight to twelve weeks in case of patients who show little change for better or worse; but to operate as soon as there is clinical or x-ray evidence of cavity formation in the severe type, especially those with horribly stinking, brownish sputum, characteristic of localized gangrene. Many of these patients will die unless drainage is instituted promptly. The condition of others soon becomes too critical for operation. A clear-cut distinction should be made between the symptoms due to an acute pneumonic or bronchopneumonic process preceding the development of an abscess and those secondary to and caused by the abscess. In the first mentioned group most patients will die if operated upon early; in the second, most of them will die if not operated upon early.

The generally accepted theoretical time limit for nonoperative treatment as stated is under twelve weeks; and yet a very considerable proportion of abscesses, when first seen by the surgeon, have been present for many months or years. Chronicity means enlargement and extension of the abscess, thickening of its walls with fibrosis, often secondary bronchiectasis, visceral damage, anemia and weakness. Adequate thoracotomy drainage is more difficult to establish and maintain, the hazards from air embolus, metastatic abscess, and hemorrhage are increased; convalescence is prolonged; secondary plastic operations often have to be performed to collapse stiff-walled abscess and secondary bronchiectatic cavities, or to close bronchial fistulae. The mortality is relatively high—not from the operation as such but because of the pathological anatomy and the wretched condition of the patient, who if he survives remains

for life badly damaged, due not to drainage operation but due to delay in instituting it. Early adequate drainage, on the other hand, means a relatively simple operation of limited extent with a low operative mortality, short convalescence, and maximal restoration of function. The time would seem to be at hand for entering a plea in behalf of more rational treatment of pulmonary abscess and against the persistent "side-stepping, pussy-footing and shadow-boxing" represented by the seemingly growing tendency to persist indefinitely with methods that have proven themselves inadequate to the individual patient.

The first step in thoracotomy drainage is accurate localization of the cavity. Circumscribed impairment of the percussion note and the antero-posterior and lateral roentgenograms present the most significant findings in peripherally situated abscesses. The percussion findings will indicate where the cavity lies nearest the surface, and this, generally speaking, is the most direct approach. Localized tenderness to palpation, when present, is very suggestive of the point where the abscess is approaching the pleurae. In case of deep-seated cavities the roentgenograms are the best guides. When one or more fluid levels are present, roentgenograms in different positions may demonstrate the three dimensions of the cavity. Sometimes lipiodol bronchography is of value in outlining the abscess-bearing area due to the filling defect produced by failure of the oil to enter the bronchi in the consolidated area. Bronschoscopy is of value in visualizing the individual bronchus from which the pus comes. Flick has used the bronchoscope left in the cavity as a means of localization for thoracotomy drainage.

The second condition for safe thoracotomy drainage is the presence of pleural adhesions sufficiently extensive to prevent infection of the free pleural cavity. The only sure and practical method of determining the presence or absence of such adhesions is exploratory thoracotomy for inspection of the pleura in the area selected for drainage. Such inspection can usually be accomplished by a small incision carried through the intercostal muscles exposing the pleura. If the ribs are very close together, as they are posteriorly, a short segment of one rib may be excised. Incision in the posterior periosteum then exposes the parietal pleura.

One-Stage Drainage Operation. If the pleura is opaque and porky in appearance, the presence of adhesions may be assumed and can be demonstrated by cutting through it down to the adherent darkly pigmented lung. Immediate drainage can be established through this adherent area without contamination of the pleural cavity.

Localization of the cavity by needle aspiration of pus or foul air should precede pneumonotomy. If aspiration fails to locate the abscess, a lead marker may be stitched into the center of the operative field. Another roentgenogram may then reveal a faulty localization. In my opinion, incising the lung or poking an instrument into it blindly is permissible only if repeated aspiration at different sittings fails to localize the abscess and the indications for drainage are urgent. In such cases the free use of the cautery iron will usually bring about drainage when the burned tissue sloughs away.

Cautery incision has the marked advantage of being bloodless, provided a coagulating current is used. Bacteria in the region of the incision are killed or devitalized and air embolism is prevented. The further enlargement of the drainage opening, as the burned tissue sloughs away, is another advantage.

It is often advisable to be satisfied with a narrow opening into the abscess cavity at the first operation, leaving its enlargement to a later sitting, when adhesions have become more extensive and the patient's condition improved. If the drainage opening is wide, the cavity may be packed with iodoform or mercurochrome gauze; if long and narrow, as after preliminary operation, soft rubber tissue drainage is preferable.

Two-Stage Operation. When the pleura is found transparent at the exploratory operation and the mottled lung surface is seen to move with respiration, a two-stage operation is indicated. The periosteum is separated from a 6 to 8 cm. segment of two or three ribs, and iodoform or mercurochrome gauze is packed between the intercostal bundles and the denuded ribs, the ribs being left in place. If they are resected at this stage, the chest wall is mobilized, interfering with coughing, which may also be volun-

tarily inhibited because of pain. The wound is closed without drainage.

An alternative method in case of very ill patients is to resect one rib or to incise one or two intercostal muscles and pack gauze against the pleura so exposed. In my experience firm adhesions have nearly always been so produced in ten days to two weeks.

At the second operation the wound is opened, the gauze is removed and the pus or foul air is localized with needle and syringe. The needle is left in situ and a drainage tract is burned down along the needle into the abscess. If the patient is in good condition, a rib resection is then performed to provide for wide access to the abscess cavity and the wound is packed wide open. If the patient's condition is poor, adequate temporary drainage only is provided, leaving the rib resection and further laying open of the cavity to a later sitting.

Only in case immediate drainage is urgently indicated is it justifiable to do a single-stage operation in the absence of pleural adhesions. Such urgency may be due to the rapid downward course from toxic absorption and from an harrassing cough. In such cases two or three ribs are resected and the lung is sutured to the parietal pleura with chromic catgut on a fine needle. The chief danger of this method lies in accidental tearing of the pleura with resulting pneumothorax and extensive empyema.

One of the annoyances incident to drainage of a large chronic cavity is regeneration of the ribs from the periosteum left behind. To prevent this, the periosteum in the region overlying the cavity should be destroyed at the primary resection by application of chemical cautery such as Zenker's solution.

Tincture of iodine, zinc chloride and the cautery iron have been used to provoke pleural adhesions, but foreign body irritation, such as that of gauze, has come into general favor in late years. An interesting modification, described by Nisson from Sauerbruch's clinic, consists in a pneumolysis and plombage using varying amounts of vioform paraffins, prepared after the formula recommended by Baer. The advantage claimed for this method is that the pressure of the paraffin prevents movement of the pleural surfaces over one another and so promotes adhesions, and also that the compression of the cavity promotes drainage and may result in a cure without drainage.

Extirpation of the Diseased Lung. Partial extirpation of a lobe is accomplished by the use of the cautery after the method of Graham. Total lobectomy may be done primarily or following thoracoplasty.

Cautery extirpation finds its chief indication in cases of honeycomb abscess formation involving a portion of one lung, in cases in which extensive pleuritis or pulmonary consolidation or fibrosis confuse the physical findings and cloud the roentgenogram so that localization of the abscess is impossible, and in the presence of multiple abscesses limited largely to one lobe. In such cases this method offers the best prospect of a cure.

Lobectomy in pulmonary abscess has its limitations, in that many patients who can be cured by no other method are in such wretched condition that they do not survive so extensive an operation. Some patients with advanced pulmonary suppuration, consisting of abscess, bronchiectasis and fibrosis, are in sufficiently good condition to withstand a primary lobectomy or a lobectomy secondary to a thoracoplasty.

Obliteration of Chronic Abscess Cavities. Small abscess cavities, even of years' duration, will usually heal following adequate drainage. Larger cavities, and especially those with walls greatly stiffened by chronic fibrosis, may persist indefinitely. The indications in such cases are a thoracoplastic collapse of the chest wall sufficiently extensive to bring the surfaces into apposition, and a chemical cautery destruction of the epithelial lining which results from proliferation of the bronchial endothelium. For such chemical cauterization a few applications of 20 to 30 per cent. silver nitrate usually suffice in my experience.

Bronchial fistulae opening into such cavities, unless very large, may be closed by the same simple method. If large, repeated preliminary silver nitrate cauterization, extending well into the lumen of the bronchus, is usually sufficient to bring about their obliteration by a later skin muscle plastic. It is important, however, to defer such attempt at closure until all purulent discharge from the fistula has disappeared.

Chronic abscess with associated extensive bronchiectasis requires a more extensive opera-

tion. All peripheral dilatations opening into the abscess cavity are opened wide with the coagulation current and all exposed mucosa is cauterized. A more extensive thoracoplasty collapse of the chest wall is necessary than for uncomplicated abscess. Sometimes a phrenic neurectomy is of marked benefit in relaxing a fibrotic lower lobe.

Healing of the cavity with "latticework" changes in the exposed lung surface and with multiple bronchial fistulae may be accomplished by patient use of the coagulation cautery at many sittings. The greatest danger in these cases is severe hemorrhage from large vessels in the structures which must be divided. The epithelium covering the whole surface and in the stomata of the bronchi must also be replaced by healthy granulation tissue before complete healing will occur.

Supportive measures, which must be instituted as soon as symptoms develop, include complete bed rest; an abundance of fluids; arsphenamin if spirochetes and fusiform bacilli are found in the sputum; emetin in case of the rare amebic abscess, recognized by finding ameba histolytica in the sputum; and blood transfusion in case of severe secondary anemia from hemorrhage or suppuration. Sedatives, especially morphine, must be used with judgment. Control of harassing cough is essential both to insure rest and sleep and to prevent the tendency to bronchogenic spread of infection. Excessive use of morphine, on the other hand, by inhibiting cough, leads to retention of sputum and to secondary pneumonia and secondary abscess. The best safeguard against these complications, as well as against hemorrhage and metastatic abscess, is early adequate drainage through the bronchus or through the chest wall.

SUMMARY

Pulmonary abscess, particularly the post-operative type, seems to be on the increase. The preponderance of evidence indicates that the great majority are due to aspiration of infection. The obvious preventive measures are the removal, as far as possible, of infection from the respiratory tract before operation, and prevention of blood and secretions from reaching the bronchi. The basic principle of treatment is early, adequate and continuous drainage, through the communicating bronchus if possible, or, if that fails after a limited period of time, through a thoractomy opening. Posture and bronchoscopic removal of foreign material and enlargment of the stoma between the abscess and the bronchus may favor bronchial drainage. If the patient does not definitely improve and if the abscess does not show definite evidence of healing after two or three months, thoracotomy drainage should be instituted. If the patient is losing ground steadily, it should be instituted as soon as there is evidence of cavity formation.

Early adequate drainage will lower operative mortality and will prevent the extensive damage to the lung and to other viscera incident to chronic abscess.

The most important consideration of operative technique are accurate localization and prevention of empyema by draining only through adherent pleurae.

DISCUSSION

Dr. M. Pollak, Peoria: I greatly enjoyed the paper of Dr. Hedblom and have learned a great deal from it. My experience in the treatment of lung abscess is very limited as compared to the experience Dr. Hedblom has had. Nevertheless I shall draw in my discussion on my own experience.

In regard to pneumothorax, any one who has collapsed lungs in a large number of cases knows that in a great portion of artificial pneumothorax cases an effusion will develop. Should this occur in a case of lung abscess this effusion will change, sooner or later, into an empyema. I regard, therefore, artificial pneumothorax in the treatment of lung abscess a dangerous procedure.

We have found salvarsan of value in the treatment of lung abscess. In lung gangrene, salvarsan might be considered a specific. I have in my mind a case which came into the Sanitarium in a dying condition, suffering from lung gangrene complicated by an empyema. Six weeks after very intensive salvarsan treatment the patient, a girl of fourteen, walked out from the place.

With regard to chest surgery, I feel that operations should be performed only after the conservative measures have been given a fair trial. It has also to be borne in mind that chest surgery is a specialty in itself and shall not be done by the general surgeon who has had no experience and special training in operations on the chest.

We have found bronchoscopy of very great value in the treatment of lung abscess as you might see from the case reports I have to give and the slides I have to show.

Case No. 1 refers to a little girl of fourteen who came to the Chest Clinic of the Peoria Municipal Tuberculosis Sanitarium with the diagnosis of tuberculosis. Going into her history we have found that her disability, causing her to cough and to expectorate large

amount of sputum of foul odor, has existed since her age of two and one-half years. She was subject to asthmatic attacks and for that reason some operation on her nose was done in October, 1926. The film taken at about the same time on October 17, 1926, showed the same condition we have found about six years later on April 28, 1932, her admission to the Clinic. After a few bronchoscopies her condition cleared up as might be seen from the radiogram taken May 11, 1932.

Case No. 2 is a boy of four with a history of cough and expectoration for two and one-half years. On the basis of the physical examination and radiogram, the diagnosis of lung abscess was made. After two bronchoscopies the condition has cleared up as might be seen from the radiogram taken January 9, 1933.

Case No. 3, a woman of thirty-five has had an appendectomy performed one and one-half years prior to her admission to the Peoria Municipal Tuberculosis Sanitarium. On the basis of the study of the sputum, physical examination and radiogram made on October 11, 1932, the diagnosis of lung abscess was made. We have put her on salvarsan treatment and her condition cleared up somewhat as might be seen from the radiogram taken December 17, 1932. After a few bronchoscopies her condition improved further as might be seen from the radiogram taken March 4, 1933. Finally we did a phrenicectomy as seen from the radiogram taken April 15, 1933, with some slight improvement in her condition. Now we are planning to use an autogenous vaccine.

I wish to thank the Chairman and the Section for the privilege of this discussion.

Dr. Carl A. Hedblom, Chicago (closing the discussion): I have nothing to add but want to congratulate Dr. Pollak on his results from bronchoscopy. It is well to bear in mind, however, that recurrences have been common following this method of treatment. If adequate drainage can be provided and sustained, whether by bronchoscopy or thoracotomy, healing will result. Thoracotomy will insure adequate drainage in cases in which bronchoscopy fails.

HOW THE PUBLIC HEALTH NURSE WORKS WITH THE MEDICAL PROFESSION*

Miss M. Louise Nicol

PEORIA, ILL.

In every other branch of nursing it is taken for granted that the physician and the nurse work together for the welfare of the patient. This same relationship has not been well established in public health nursing, although the rules and regulations for public health nursing provide for it. We hear uncomplimentary remarks from various sources regarding the cooperation betwen physicians and nurses in public health. For example, a nurse who saw the subject of this paper, "How the Public Health Nurse Works with the Medical Profession," remarked, "Most of the time they don't!" We find that many physicians have the same attitude as the nurse just mentioned.

The relationship between the medical and the nursing profession is recognized by leaders in both groups as the most important factor governing the success or failure of a public health nursing program. One of the great obstacles in the way of proper working relationships between the physician and the nurse, and one that is also a serious handicap to public health nursing is the variety of interpretations of public health nursing which results in misunderstanding between physicians and nurses.

This is no doubt due to the rapid growth of the public health nursing movement, from the skilled nursing care of the sick in their homes to the present stage of development in which public health nursing is described as "an organized community service rendered by specially prepared graduate nurses to the individual, the family, and the community. The service includes the interpretation, and teaching of medical, sanitary and social procedures for the prevention of defects, promotion of health, and may include skilled nursing care of the sick in their homes."

Disharmony will surely result if the physician understands that in public health nursing the nurse's responsibility ends in the home when bedside care has been given to the sick, while on the other hand the nurse sees such problems as children being exposed to an active case of tuberculosis, or a prenatal case in the fifth or sixth month of pregnancy who has had no medical supervision, and undertakes to correct the situation.

Let us not overlook the fact that public health nursing is not a new branch of nursing, but one that has developed through the ages, keeping pace with discoveries and advancement in medicine which has created a need for this type of nursing service. The discovery of the use of immune serum in the control of measles is an example of creating a need for public health nursing service. Since education of the parents is necessary before the scientific knowledge can

*Presented on Medical Women's Day, May 16, 1933, at Peoria.

be applied to practice, there must be some means of teaching the benefits of the discovery and influencing parents to seek the treatments for their children.

Team-work is important, and no less so in public health nursing, a branch of preventive medicine, than it is in nursing the sick, a branch of curative medicine. Therefore, the public health nurse who understands ethical public health nursing procedures will not be guilty of promoting the use of any such discovery in preventive medicine until she knows that it is being generally used by physicians and the local medical society have approved a plan of educational work. Proper working relationships will never be established until there is mutual understanding between physicians and nurses regarding the field in which the public health nurse must function and the principles which govern her in her activities.

Information that would lead to proper interpretation of public health nursing and result in better understanding between physician and nurse is available. It has been prepared by the National Organization for Public Health Nursing, which was founded in 1912 for the purpose of promoting, developing and standardizing public health nursing. Because this is a community service, with which physicians, nurses, health officials and laymen are concerned, the activities in which the organization engages to fulfill its purpose are carried on in close cooperation with these groups. All the plans and policies where medical service is involved have been made with the help of leading authorities in the medical profession.

Among the many things that this organization has done for public health nursing, it has compiled and published a Manual to be used primarily by the nurse as a guide in her relationship to the agency employing her, the family she serves, the medical profession, technical procedure, and content of program. This Manual contains the information necessary to bring about more uniform understanding of what public health nursing really is. It has become the guide in public health nursing matters for schools of public health nursing, State departments of Public Health, and all properly organized nursing services. When the medical profession will use this as their guide in relation to nursing matters, we can hope for a closer bond between physicians and nurses in this field of nursing.

The public health nurse's activities in a community depend largely upon the health problem in which her employing agency is interested. The services may be rendered in a community by means of one or more of a dozen types of programs, built around the health needs presented by age groups or special health problems. These programs are classified as maternity, infancy, pre-school, school, morbidity, communicable disease, tuberculosis, syphilis and gonorrhea, mental hygiene, orthopedic, industrial and adult nursing service. Medical service is involved in every one of these programs and the qualified public health nurse expects to work with the medical profession in carrying on her work.

Let us cite a specific instance of how the public health nurse works with the medical profession. We will suppose that a community has had several cases of diphtheria and the local public health nursing organization decides to launch a campaign to immunize children against this disease, a new project for this particular organization. In our Public Health Nursing Manual we are advised that new projects involving medical service must be planned in close cooperation with the medical profession. It is standard procedure in well-planned Public Health Nursing organizations for the medical profession to cooperate through the medium of an advisory committee appointed by the medical society. The nurse will advise this committee regarding the organization's decision to conduct a diphtheria prevention campaign, and will ask the medical advisory committee to meet for the purpose of deciding upon policies to be observed in the educational work with parents. The nurse will not be satisfied for the committee to say, as they too often do, "Whatever you do will be all right with us," but will expect the committee to decide what parents may be told regarding such questions as:

1. Age groups that shall be immunized.
2. Number of treatments to be given.
3. Time that shall elapse between treatments.
4. Location and hours where physicians shall administer treatments:

a. Family physician's office, or

b. In groups at school, hospital or other central location.

5. Cost of treatments.

6. What provision shall be made for those parents who are unable to pay.

The medical advisory committee will also be expected to examine the literature and publicity material to be used in the campaign for scientific accuracy. The nurse will abide by the decision of this committee without further contact with other physicians in the community, because she expects this advisory committee to explain to each physician, either individually or in medical society meeting, the plans and policies that have been approved by their own profession. The nurse is then in a position to plan activities that should result in parents taking their children to the place designated for administering the preventive treatments.

This same principle of guidance and direction by a medical advisory committee applies in all phases of public health nursing. A public health nurse may be carrying on an antiquated program in tuberculosis, of supervising and caring for the advanced cases of tuberculosis, but she will not be able to shift her efforts to preventive work until the medical profession helps to plan and will approve a nursing program that conforms to scientific knowledge in relation to control and prevention of tuberculosis. The nurse is a most effective means of educating individuals and families, but she must have definite instructions as to what she shall teach regarding such matters as medical supervision of adults and children who are contacts, general hygiene for the patient, disposition of contacts and cases in the home where proper care cannot be obtained.

In public health nursing, the first essential with working with the medical profession is the properly qualified public health nurse. Next to this is the medical advisory committee, to which the nurse looks for guidance in planing new projects, adjusting already established programs to conform to progress in medicine, interpreting the nursing program to the medical profession, explaining and defending ethical public health nursing procedures, all of which will result in mutual understanding of public health nursing work and better and closer cooperation between the private physician and the public health nurse.

THE PSYCHOLOGY AND MENTAL HYGIENE OF PERSONALITY*

FREDERICK L. PATRY, M. D.

Neuropsychiatrist State Education Department, University of the State of New York.

ALBANY, N. Y.

What price personality?

There is perhaps no other aspect of human possessions which has received so much popular hold on the mind and tongue of the average person during the past decade than that of personality. Hardly a day goes by but one can reach for almost any newspaper, periodical and book and find no small consideration given to the significance and value of personality. For example, one may have noticed in a popular daily newspaper the caption: *"New Hotel To Hire 'Personality' Girls—Intelligence Will Be Secondary Requirement."* The article elaborates that one hundred young women who have that indefinable quality known as "It" will be selected for positions. Attention to the complexion type is given in order that the girls selected would harmonize with the surroundings. Again, one may have noticed the headline: *"Personality Route to Co-Eds' Hearts."* Personality ranked first in the list of male attributes listed by 12 women campus leaders at a certain metropolitan university. Intelligence, athletic ability, good looks, conversation, dancing ability were next in the order named. Wealth and social position were held to be unimportant. Another newspaper headline states: *"Rank Personality As First In Success."* The article goes on to say that "personal qualities rather than technical proficiency make for success in the modern business world. . . . Greater effort must be made by educational schools to discover the personal qualities which make for success and develop these qualities in the early training of students." One could go on to much length quoting excerpts which cast a halo about "personality." Because of its apparent tremendous importance, let us critically analyze the meaning and significance of personality, its nature, origin, components, types, development, balance, organization and finally, how we might systematically study it with the object in view of ironing out wrinkles and improving its func-

*Last in a series of six lectures on Adult Psychology and Mental Hygiene to the Albany City Club, February 21, 1933.

tioning. This should give us not only a better understanding of ourselves, but also a keener appreciation of others as well as a greater capacity for enjoying human nature and life's experiences.

Without becoming too technical, we should make a distinction between what passes for "personality" in the popular mind, and what scientific workers mean when they utilize the word. We have seen in the above excerpts that personality was utilized as the equivalent of "It" or sex appeal. Thus mere external physical form and appearance was the gist of the concept. In another excerpt we noted that personality was utilized in a sense equivalent to citizenship and character, for the article mentioned later weaved into the picture what it considered to be the real essence of business success, "honesty, integrity, loyalty and a spirit of service." Other popular conceptions of personality include the mysterious and supernatural power, irresistible appeal, fascinating influence, magic potencies, and universal vibrations. In some minds there is also a theological and philosophical hangover of bygone decades when personality was regarded as the "gift of the gods," the reflection of the divine being, or the metaphysical and transcendental essence of man. Finally, I might quote a passage from a popular book on public speaking: "Your personality is the sum of all of your good and bad qualities. It includes all of your mental and physical characteristics, with special emphasis on the mental. What do you mean when you say that a friend has a good personality? You mean that he is well liked and has the ability to get things done. You mean that he possesses qualities which enable him to get along well with people. He is an outstanding individual, a leader. He possesses the qualities of *clear thinking, self-confidence, tact, and enthusiasm.* These are qualities which make his stand out; which make him a real power and influence in the college or community. These are qualities training in effective speaking will help you to develop."

Popular conceptions of the meaning of words are not to be brushed lightly aside. Ordinary language is often difficult to translate into scientific terms, although many of the latter have found their way into everyday speech, because there is nothing else which exactly means the same thing. However, in order to pave the way for a more or less scientific development of the theme of this paper, it is the writer's intention to respect the conception which embraces empirical, theoretical and experimental science, as well as critical and trained common sense.

Let us consider the origin and meaning of the word personality. The world "person" is derived from the Latin *persona,* which means a mask worn by an actor. Next, it came to mean the actor himself, and later, just a human being. "Personality" is defined in the dictionary as "that which distinguishes and characterizes a person". Thus every human being possesses a personality of some sort. Moreover, it is apparent that personality has both physical and mental aspects which gives us the right to consider the morphology (form), physiology (function of parts), biochemistry, and psychology or psychobiology of the personality. Our main purpose is to focus upon the psychology of personality. However, since the personality functions as an integrated or unified whole, which perforce in analysis and description must be approached by a study of its parts, we must give some attention to various aspects, but emphasis will be given to mental processes, traits, characteristics, their interrelationships, and mental health significance.

Let us briefly consider the facts and factors entering into personality. Since the actor in life's drama does not blow in out of a clear sky, we must respect the facts of heredity, our original endowment in personality development. No one can gainsay the obvious fact that each and every person is the conjoint product of heredity and environment. Certain aspects, however, may be more attributable to nature, and others to nurture. For example, it would seem that the general physical constitution or bodily structure, aptitudes and capacity to form associations or bonds are mainly inherited. On the other hand, behavior patterns, mental traits, special skills, knowledge and the more complex integrations of structural parts and mental processes are acquired, that is, largely the product of experience—the interaction of an individual to his environment. It is a waste of time speculating over the relative importance of the roles of

heredity and environment. They are inseparable. Let the facts of each speak for themselves and focus on the question: What sort of environment will give original nature its best opportunities for optimal development of its constructive potentialities?

Keeping in mind the impossibility of describing the whole personality at once and the inseparability of various aspects of the personality and the factors influencing or shaping it, let us single out for special mention three important personality components.

Intellect is the cognitive or knowing aspect of the personality, the sum of perceptions and ideas and their organization. *Temperament* is the affective or feeling aspect, the total predisposition in regard to feeling and emotion. *Character* is the conative or motor aspect, the total constitution or make-up of action or impulse. The ethical significance of character is omitted since this is essentially a concern of ethics and not of the science of phychology which studies behavior objectively or impartially whether it is good or bad.

Now let us focus a while on two of our chief problems and interests in personality—its *organization* and *balance*. Attention to these factors is most essential if we are going to bring about the best possible development of each individual's personality assets. And by *best* is not inferred any one best type. The facts of individual differences in all the components of personality as well as different experiences, goals and purposes make puerile such brain waves as the development of the perfect person. Moreover, who would want to live in a social world where everyone was perfect or the ideal type? Thanks to nature and variety of experiences, we are spared such boredom. There will never be any or one only ideal type of person be he teacher, physician, business man or laborer. We need a variety of types functioning in a multiplicity of constructive ways if we are to be happy and promote civilization. Since it has been estimated that only about one-half of one per cent of the people could not be made to fit into any community, the challenge is thrown to society, and educators in particular, to create or shape opportunities in which practically all people will achieve some measure of success and reasonable amount of satisfaction in the business of living.

To return to organization and balance of personality assets and liabilities in the intellectual, temperament, and character aspects: What is their meaning and significance? How may they be brought about? *Organization* means the formation and integration of various parts of the personality from the earliest and simplest neural aspects, to behavior patterns, constellations of ideas, emotions, drives, interests, likes and dislikes, sentiments and purposes. The achievement of this genetic-dynamic hierarchy of total personality functioning is achieved through and dependent upon intellectual, emotional and instinctive endowment plus experience, training, guidance, example of others, conscious and unconscious goals and purposes, promoted by effort directed toward unification in development. Organization of personality is achieved through overcoming regressive forces, and attained and maintained by making the necessary compromises between emotional-instinctive forces and the facts and demands of reality. Thus normal conflict becomes wholesomely resolved. However, conflict might give rise to abnormal repression or unfortunate handling of socially incompatible ideas, wishes, longings, feelings, sentiments, or antagonistic drives and purposes. Such unhappy results are largely due to poor habit training in making good choices and wise decisions. As a result we often find individuals complaining of a diffuse eruption of bodily symptoms not explicable on the organic level. These are body protests to worries, conflicts, fears and anxieties which indicate that the person is lacking in good organization and balance of his personality components.

Balance of personality refers to the proportion and symmetry of various parts of the personality. When we speak of a well-rounded or well-integrated personality we mean one which possesses more or less symmetry and unification of all its parts and meaningful relationships of behavior patterns; one which is able to successfully dissolve or harmonize internal and external conflicts by making wholesome choices and decisions and compromises with life as it is.

We need not elaborate on variations encountered in personality organization and balance. Experience shows that we may have any one of the three complex and yet inseparable aspects of personality in the lead or dominant; or we may note various combinations. But it is important to appreciate the importance of organization of each of the above components of personality at every level of development in connection with some major or dominant drive, sentiment or purpose, if we are to bring about good unification, balance and power of the personality. The well integrated person thinks, feels and acts in unison.

The many causes of poor organization, unbalance or lack of integration, such as poor hereditary endowment, intrauterine, birth and developmental anomalies, nutrition, infection and disease, poor habit training, peculiar experiences and their handling, and so forth, need not here be amplified. Moreover, we shall not elaborate upon the various psychological or physical types of personality or body builds which display varying degrees and combinations of the above three personality components, and their tendency to develop certain reaction-types of ill health when more or less imbalance occurs.

How may one's personality be developed, trained and improved? This is rapidly becoming the central theme and chief objective in education. Instead of merely studying subjects in preparation for jumping examination hurdles, educators with critical prevision are giving more and more attention to the study and unfolding of the total personality of the individual pupil and student in order that he might become reasonably happy, cultured, economically marketable and a social asset. It is not my intention to minimize the tremendous importance of an adequate grasp of the socalled tool subjects (reading, writing and arithmetic) and the impartation of knowledges, habits, skills and proper attitudes, as well as some attention to the physical and character aspects of the personality. This forms the foundation for the next stage of educational growth, namely, the study of meanings and results of implications and relationships of educational content to current social problems which have their root not only in varying degrees of inadequacy of power of thought, but also in variations of emotional-instinctive factors, the mainspring of human behavior.

Since self-control of one's instinctive emotional life is the outstanding earmark of a well integrated personality, how may this aspect of *emotional education* be facilitated? First let us realize that control does not necessarily mean inhibition or repression, although normal repression or rather wholesome choice and decision, should be encouraged. Control is best brought about by the influence of good example of those with whom we have intimately associated, plus intelligent guidance, direction and followership. Impulses need not be expressed in their original, often crude, state; they may be diverted into suitable channels which are not only socially approved, but also individually satisfying because better organization of the total personality is promoted. If we would develop a richer and fuller personality, we should create new situations and opportunities to develop more impulses, desires and longings, and controls which are frequently experienced in conformity to convention, tradition and custom. Linking of personality development, with purposes, goals and aesthetic and social sentiments also aid in the achievement of better self-organization, true temperance and the golden mean. On the other hand, high-handed authoritative prohibition of human drives, wishes and activities tends to weaken character since it prevents practice in controlled expression. Human nature is so constituted that ambivalent or opposite tendencies and desires are apt to become uppermost when fundamental drives or wants are prematurely inhibited, or before the total personality is sufficiently educated to see and accept their value and have adequate time to make sublimations. Thus the question may be raised: How can aesthetic and temperate drinking habits be acquired where the imbibition of alcoholic drinks is prohibited? How can socially desirable sex behavior or social manners be cultivated where intermingling of the sexes is tabooed or unduly curtailed? How can moderation of the gambling tendency be cultivated or sublimated where all forms of gambling is strictly denied? How can aesthetic tastes and wholesome interests be acquired in literature, art, drama or movies if we dogmatically prohibit anything which smacks of

the riské, pornographic or obscene? How can religious tolerance be attained if there be stamped dogmatically into the minds of people that there is only one royal and exclusive road to salvation? How can moderation in smoking habits or any other sorts of social or personal habits be brought about if we prevent practice in control of instinctive or acquired action-tendencies or wants and at the same time thereby arouse a desire for them? This is a major problem in education for the home, school, church, community, civic and governmental organizations during the next three decades.

What have we to offer by way of *methods and devices in personality analysis and reconstruction?* How may one develop an attractive, charming or pleasing personality? How may one acquire a balanced harmony of outlook and maturity of personality? How may one iron out difficulties of adjustments to life by bringing about a happier balance of one's assets and liabilities?

Many *questionnaire forms* have been prepared which provide a simple check list of important traits, abilities, drives and interests and actions which color personality functioning. Such personality check-ups may prove helpful providing their limitations are realized and that they form merely one aspect of approach to the very complex functioning of personality. Many other facts of one's life record are essential if one is to avoid being misled by a mere cross-section sampling of behavior under highly artificial test conditions. Thus the *biographical life record* is essential in evaluating personality.

Mention should also be made of the method of *psychoanalysis* which has been enjoying an increasing popularity during the past 35 years. More recent developments in this specialty of psychiatry reveal the fact that psychoanalysis is not primarily concerned in symptom analysis but chiefly focuses upon character and personality analysis, synthesis and re-education by utilizing free associations of the patient, dream experiences, and interpretations by the analysist in a situation which profits by the transference relation, or rapport of patient with physician, and its handling during negative and positive phases. By such means, the patient becomes more and more conscious of his personality functioning, particularly with respect to the unconscious part of his make-up which may have been causing maladaptation and symptoms because of repression of drives which were more or less antagonistic to conventional morality. Thus the causes of repression become recognized and accepted by the patient, and in this way, sidetracked life-energy or libido is made available for adult personality growth. With the understanding and overcoming of repressions, the patient is now in a position to constructively change the personality by making more wholesome, more mature choices and decisions with respect to behavior opportunities. Although psychoanalysis is a costly and time-consuming method of personality reconstruction, yet, in well-trained hands, it holds a legitimate place in psychotherapy, but by no means an exclusive one.

Finally, let us briefly consider the method of *"distributive analysis"* of Adolf Meyer. By means of a "life chart" which graphically represents various levels of personality integration, the person undertaking his analysis is afforded space to record the meaningful facts of his life record, including mental and physical happenings actions and reactions to definite life situations—personal, familial, environmental and sickness. Such an analysis singles out for critical evaluation such facts as work, recreations, social activities, interests, strivings, ambitions, idiosyncrasies, type of temperament, ratio of dreaming, thinking and action, composure, estimate of self and others, successes and failures, likes and dislikes and assets and liabilities. An attempt is then made to *balance the personality* by a satisfaction formula which aims to strike a wholesome balance of performance and mood in proportion to one's capacity, opportunity and ambition, and that in the light of the individual's vision of ultimate attainment and appreciation by others. Thus by reflecting on concrete situations of past performance, recognizing the role played by cause and effect, the person gains insight as to how favorable or undesirable reactions, attitudes, interests and habits took root. This paves the way for an appreciation of more wholesome choices and decisions in meeting life situations in the present and future, by profiting through past experience and its digestion.

A few practical suggestions or guide-posts may be erected which will help direct us in realizing maturity of growth in personality performance:

1. Since the intelligent segment of humanity has cast off the shackles of predestination and fatalism, we should capitalize opportunities to promote personality organization and balance. Personal desires and effort can largely determine personality development. But like anything else that is really worth the having, one must work hard for it, consistently and with singleness of purpose.

2. If we would possess a likeable personality we must sincerely wish it to the extent of critically analyzing our life performance for our weak points and balance these with our strong ones. The person must recognize and understand the causes of disagreeable traits, know how to replace them with more socially desirable and pleasant ones, and withall, a willingness to unremittingly strive through practice in reaching one's objective.

3. Because of the tremendous influence of example through suggestion and identification in moulding personality, serious attention should be given to the sort of human beings with whom one intimately associates. Parents and teachers must set their own house in order since their behavior patterns are apt to become engrafted on younger, sensitive, plastic human material.

4. Richness and stability of personality increases with the richness of impulses, wishes, desires, and their control or discipline. Therefore, create opportunities to expose the individual to a great variety of new persons and environments, but not out of proportion to his stage of development. The predominant result should be more or less success in life adjustment. The joy of accomplishment and realization of some degree of success in his undertakings are important motivations and incentives to carry on the growth process. You don't need "inspiration".

5. Should you feel that you are better or superior in ability to those about you, critically analyze yourself in order to estimate the relative roles of self-confidence and conceit. Size up a person on his concrete performance, rather than his own evaluation or manner. Both the blustery person and his opposite, the individual with a quiet, unassuming air of efficiency, are apt to mislead themselves and others as to real capability in filling the job.

6. There is no more important responsibility than learning to understand yourself and others if we are to promote the art of living happily with ourselves and others. A personality study such as I have last outlined will assist you in realizing this desideratum. Recognize and accept your possibilities and limitations, in order to prevent unnecessary feelings of inferiority, frustration and disappointment. Welcome new points of view and cultivate a wholesome attitude of tolerance without sacrificing well-founded conviction and self-confidence.

7. Promote personality growth by treating others with due respect for their ideas, feelings, attitudes, philosophies and purposes. Mutual respect is a *sine qua non* for social progress. Create opportunities for freedom of thinking, feeling and acting. Utilize the value of goals, purposes and sentiments in unifying personality organization through the learning process. This will lead to a better evaluation of life values, needs and results.

8. Cultivate a sense of responsible individualism which encourages taking on of more and more responsibility in proportion to one's capacity, but also in the light of how others are affected. Social welfare must hold priority over individual wants, but the latter should be realized to the full in so far as the immediate and ulterior group welfare is not jeopardized.

9. Do not be too set in your purposes, goals or objectives. Human personality is too complex to predict with much reliability future performance or needs. Respect the individual for what he may become, judging this by his ability to profit by mistakes and what he is actually able to accomplish with a sense of satisfaction. Even Bernard Shaw warns us to respect young "nobodies" since you never can tell how they may turn out. Change of environment, new opportunities, time for growth in personality formation, and alteration in the pressure of life upon the individual may pave the way for unexpected personality developments.

10. Realize the importance of detecting and correcting physical as well as mental stress, strain and drains since these may cause un-

favorable personality changes. Periodical examination by your family physician and the seeking of expert medical advice at the first sign or symptom of personality disorder will not only save you unnecessary discomfort but will also aid in preventing more serious developments.

State Education Department.

TUBERCULOSIS IN CHILDHOOD*

With X-ray and Postmortem Slides—

EUGENE T. McENERY, M. D.

CHICAGO

The diagnosis of tuberculosis in childhood rests upon the following factors, namely: History of contact, physical examination, tuberculin tests and roentgenological findings. To evaluate these four factors as to their relative values in the diagnosis, I would place them in the following order: Roentgen findings, tuberculin tests, history of contact, and last, physical findings. It is difficult if not imposible to make a diagnosis of tuberculosis in children on physical findings alone, and it is in view of this fact that this series of slides will be presented to show you what was seen on the x-ray film and what was found in the pathological specimen.

The primary complex in childhood may be located anywhere in the lung. It usually consists of perihilum or small or extensive parenchymal infiltration in the lungs, which slowly resolves to be replaced eventually either by calcified hilum glands alone, or by Ghon's tubercle associated with calcium deposits in the adjacent lymph nodes. It is only when calcium is present in the tissue that the primary lesion is discernible on the x-ray. Postmortem findings have repeatedly shown this to be true.

Perihilum infiltration frequently cannot be seen on the x-ray and yet large caseous glands in and about the hilum are found at autopsy.

Miliary tuberculosis: This type of lesion following in the wake of the acute exanthemata does not show characteristic chest findings on physical examination and unless serial plates are taken the true diagnosis is missed. The small miliary tubercles unless calcified will not show on the x-ray. The typical "snow storm" appearance should not be confused with that of a broncho-pneumonia which clears up in a short while.

Cavity formation: Occasionally in childhood one sees overwhelming pulmonary infection with extensive infiltration into the parenchyma of the lungs. These cases are afterwards diagnosed as pneumonia but the course is too long and serial x-ray plates show the consolidated area changing. Casetion and excavation do not take place rapidly and it may be some time before a child has the typical physical findings of a cavity and accompanying positive sputum. Many times these caseous areas only show a slight "moth-eaten" appearance on the film and pathologically the process is more extensive. This is because of the lack of calcium in the tissue.

In conclusion: To be complete in our search for early pulmonary lesions in childhood, it is necessary that we take x-rays of the chest, for frequently physical findings may be negative and a roentgenogram may show considerable involvement. In addition the tuberculin test is of great importance and combined with a history of contact, an early diagnosis can be made at a time when proper treatment will be of considerable aid, instead of waiting for the physical findings to appear when usually the process is so well advanced that it is only a question of time until the child succumbs to the disease.

707 Fullerton Ave.

DISCUSSION

Dr. Fred Meixner, Peoria: I think Dr. McEnery has given a wonderful description and detailed account of the differential diagnosis of pulmonary tuberculosis. I think as he does that we make sometimes entirely too much of one particular phase of tuberculosis diagnosis and neglect the others. As he mentioned, it is very difficult to differentiate which is more important, physical examination, history of tuberculosis, contact or x-ray examination or tuberculin test. In one particular case one may be paramount over the other.

As the Doctor has shown, very frequently the x-ray interpretation and findings will not bear out the clinical history or autopsy finding. I think he has made a beautiful case out of the fact that you cannot take the x-ray for one hundred per cent. when it comes to diagnosis of tuberculosis in childhood. I am glad he is following Armond DeLille, Steinle, Engle and men of that type who are doing this type of work, that is, doing the clinical work, the x-ray and laboratory work and following it with postmortem.

I do not think there is any subject in the field of medicine where there has been so much loose thinking, so much profuse writing and so few facts that can be

*Read before the Section on Radiology of the Illinois State Medical Society, Peoria, May 17, 1933.

substantiated by postmortem as in the subject of pulmonary tuberculosis in childhood. In the average case, if you have tubercle bacilli in the sputum, the physical signs and the x-ray show the lesion of adult tuberculosis. When you find either the child is one of those 75 to 90 per cent. past help or the child has already formed calcareous-caseous tubercles and has walled the infection off, and what you find is an extraneous healed affair with possibly an acute activity. Tuberculin and x-ray, I think, should go hand in hand. I do not believe you can differentiate the one and say that is important over the other or is not so important. You cannot pick out the tuberculous children unless you make the tuberculin test. You cannot prove the tubercles unless you have the calcareous tubercles in the x-ray picture.

The clinical question is, are you trying to diagnose a tuberculous lung or trying to diagnose tuberculosis in the child. It has been common in a great many children, perfectly healthy, with normal x-ray findings, no history of contact that they will give a positive tuberculin reaction. Dr. Rivier has shown that you can find a dullness between the scapula and spine in a great many cases and make a diagnosis of pulmonary tuberculosis but the autopsy will not follow it up.

Halls and Friedman did rather an amusing piece of work, submitting series of x-ray plates to six separate interpreting individuals, a pediatrician, two chest specialists and three x-ray men. No one agreed on the interpretation of that series of plates, showing we still do not know how to interpret the x-ray plate from the standpoint of clinical findings. Wolf and Stone have recently written an article, which you have probably read in the Journal of the American Medical Association, in which they called attention to the hilus shadows without calcifications, as the Doctor has shown in one case. They may be tuberculous and may not. If you make a tuberculin test and it is positive, you have not proved that they are tuberculous either. That brings us to the question I asked a minute ago, do you want to diagnose a tuberculous lung or a tuberculous child? I think if you take a history of contact, get a positive tuberculin test, find calcareous-caseous tubercles and the child is undernourished and with a moderate degree of anemia, you can treat it as a tuberculous child no matter what the findings or interpretations are.

I happen to be particularly interested in this work because we have been doing a series of tuberculin tests followed by x-ray in the Peoria city schools. We sent a note to the parents asking them whether they wanted their children given a physical examination. The physical examination was not carried out with the idea of making a diagnosis from the physical examination, because it is impossible to make a physical examination on a child and determine the presence of tuberculosis unless that child is already at the stage where nobody can do it any good—where it may be a subject of one of those postmortem findings.

Bronchial pneumonia and syphilis of the lung can simulate pulmonary tuberculosis, so the physical examination is worthless from the standpoint of diagnosing tuberculosis, but it picks up the undernourished, pale child, the child with enlarged glands which you are suspicious of having tuberculosis. Then we make a tuberculin test on the child. If the tuberculin test is negative in an otherwise healthy child, that child is dismissed until further observation is necessary. We follow those who do have a positive tuberculin test with x-ray whenever we can. The ideal thing would be to examine those 100 per cent. not only with one plate but, as the Doctor said, with serial plates repeatedly made. One plate does not prove anything on a child's chest. If we follow these up and find these caseous-calcareous tubercles, we are sure it is a case that needs treatment regardless of whether the child shows any activity at that time. The child is put in a sanatorium or open window room, whichever is proper for the child. In other words, the x-ray is not an adequate diagnostic aid.

To sum up the diagnosis of childhood tuberculosis, first, the x-ray is not an adequate diagnostic aid; second, laboratory tests by themselves are inadequate; third, physical examination is only useful when its findings are borne out by the others. The tuberculin test is especially valuable from the standpoint of taking a group of children and running them through to find the tuberculous ones. History of contact is only valuable if you can prove that you have found something by the other methods. In other words, when the child still has tuberculosis in the pulmonary nodes or in the intestinal nodes, then is the time that you can do that child the most good. Then is when your x-ray findings will not be positive. When the x-ray findings and the physical signs in the chest are positive your child is already pretty far along in the diagnosis. We should try to diagnose the tuberculous child rather than the tuberculous chest.

I want to thank the Doctor. He and his associates in this work are following in the footsteps of other men, and work of this sort will ultimately lead us to the point where we will be able to make a diagnosis, I think, of pulmonary tuberculosis or of tuberculosis in a child before it becomes pulmonary, making it possible to take those children and put them in preventoriums or sanatoriums properly conducted or open window rooms in the public schools and prevent pulmonary tuberculosis in adult life.

Dr. Thomas Cantrell (Bloomington): We have had rather a gloomy picture of tuberculosis in childhood today. You notice that by the autopsies. Such a picture is not a true picture of tuberculosis in childhood taken as a whole. The tendency of tuberculosis in childhood is to get well. While the x-ray is pretty valuable in the diagnosis of tuberculosis as well as other methods, we find, especially out here in the country, that our children are best treated in the home.

After a diagnosis is made, the x-ray is invaluable in finding the process that the child is going through in the future; whether the child is tending to get well or whether it is not, it is best treated in the home, if the home is clean, not infected with tuberculosis. If pictures are taken of that child every month for three or four months, and by comparison of those pictures it is found the child is not improving, the thing, then, is to turn the x-ray upon the associates in that home and

find the ones who have the latent tuberculosis, which they are so liberally distributing and place that patient in a sanatorium.

Why are children better treated in the home? You cannot treat a child successfully with any disease unless that child is extremely happy. There are very few children who give mental assent to leaving father and mother and going to a hospital or sanatorium without considerable fretting. As long as that frame of mind persists and you have not the mental assent of the child, the child is in the very worst possible condition.

For that reason, we prefer to treat the child in the home and isolate, if necessary, any of the adults in the home who are really infecting the child.

Dr. McEnery: First of all, I wish to thank the doctors for discussing my paper, and while we have had a gloomy outlook on tuberculosis this afternoon, still I feel the same as Dr. Cantrell—that childhood tuberculosis is not always fatal. Recently a paper was published by Stewart in Minneapolis in which he stresses the point that childhood tuberculosis of the type I showed on the slides showing a massive infiltration out from the hilus usually gets well. In the series he presented, not one case died of a primary infection. In the series of cases that I have, it does not seem to follow. Of course, the type of infection may be a little different.

In the case of the six months old babies, these are primary infections, but there are many things we cannot as yet determine in the study of tuberculosis,—that is to say, the dosage of the organism, the virulence of that organism and the resistance of the host are three things that cannot be measured. Until we can determine these, it is going to be difficult to determine when such a case is going to get better and when one is going to have a fatal termination. These cases received a massive dose and died of advanced pulmonary tuberculosis.

The point which Dr. Cantrell brings out should be well taken, that is, to remove the child from the tuberculosis exposure. If a person in the family has tuberculosis, he should be taken out of the family. If that cannot be done, the child should be isolated. But it is pretty difficult to isolate a child from a parent. In this community, it may be all right to keep them in the home. In the larger city, it is difficult to keep the child in the home with a tubercular family. Usually these children come from poorer classes of homes—colored, Mexican, and so forth. The economic situation is not good and the best thing you can do is to put them in a sanatorium although I agree that a sanatorium is not the proper place to keep children. If it is a far advanced case of pulmonary tuberculosis, you can keep them in bed and make them do things the parent cannot have them do in the home, but if it is the childhood type of tuberculosis where you have a massive infiltration in the parenchyma of the lung with enlarged hilus glands which eventually heal and leave scarring in the gland around the hilus or Gohn's tubercle, that child should not be kept in the sanatorium but in the home.

The importance of the serial x-rays in the diagnosis of tuberculosis in childhood is very important. Again let me admonish you that if you have a child that gives a history of contact and shows some shadows in the parenchyma of the lung, don't be content with examining the child every month or three months on clinical examination alone, but take an x-ray to make the findings complete.

CHRONIC INFECTIONS OF THE PROSTATE GLAND.*

CLARENCE H. BOSWELL, M. D.

ROCKFORD, ILLINOIS

Welch states, "It is not more knowledge which is needed so much at the present time as a more universal application of what already exists." There are plenty of proven facts concerning infections of the prostate gland but their application to general medicine must be stressed. The neglect of prostatic studies may be attributed to three things, viz:

1. The failure of far too many physicians to make the rectal examination a routine procedure.

2. A lack of knowledge of the real etiology of prostatic infections.

3. Not sufficient emphasis being placed on the prostate as a focus of infection.

The routine rectal examination is of unquestionable importance and, supplementing it, a microscopic examination of the secretion from the prostate and a culture of this secretion may be factors of prime importance in the search for obscure diseases.

For years we have been complacently accepting the idea that all infections of the prostate gland and seminal vesicles were of gonococcal origin; and that, if there was no history of gonorrhea, infections of the prostate could then be safely ruled out. Text-books still state that gonorrhea is the etiology of these infections. What part it really does play is in doubt, and continues to be a point of controversy. Stuhler, at the Mayo Clinic, says that gonorrhea plays no part in 56 per cent. of their cases of chronic prostatitis. Pelouze recently reports that out of 100 such cases, only two had had an attack of gonorrhea within twenty years, and that only seven gave a history of ever having gonorrhea. Surely, the old belief has little to substantiate it.

In searching for foci of infection, the physician rightfully studies the teeth, tonsils, and

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sinuses at once; but statistics show that an average of four and one-half years pass before prostatic studies are made.

The frequency with which these prostatic infections are met parallels the intensity of the search made for them. Pelouze states that 72 per cent. of men, having focal infection symptoms, have definite infections in their prostates; and that 35 per cent. of all men over thifty-five years carry such foci of infection. From these facts, we must emphasize that in the male there are three main foci of infection, teeth, tonsils, and prostate, the so-called, "Triad of Infection."

Etiology. If infections are present in the prostate in any such proportion of cases as we have stated, then the questions must be asked: "How do they get there?" and "Are they of any pathological significance?"

They may arise either by direct extension from the urethra or by invasion from the blood stream.

From the urethra the gonococcus would be the usual infecting agent and it, no doubt, is the cause of many acute inflammations of the prostate. Investigation has shown that this organism dies out quickly, probably eighteen months being the time limit in which it may be isolated. After this, only secondary invaders are found.

Urethritis, due to other bacteria, may infect the prostate; or the prostate may be the cause of simple urethritis.

Recently studies show, however, that prostatic infections are rarely primary; they are, in an overwhelming majority of cases, associated with dental and tonsillar infections, and these latter constitute the primary foci from which the prostate obtains its infection. Occasionally other foci may be the source of trouble. Among these are listed the gall-bladder, intestinal tract and, rarely, the facial sinuses.

Bacteriology. Cultures taken from the infected prostate show a multiplicity of organisms, usually with one predominating. Pelouze finds the Staphylococcus most frequently and next the various strains of Streptococci. Allen Nickel, after analyzing 3,500 cases at the Mayo Clinic comments: that the normal prostate contains a mixed flora of microorganisms just as the mouth; that the long chain Streptococci are probably not pathogenic; that the short chain and hemolytic Streptococcus and the hemolytic Staphylococcus should be regarded with suspicion. The Streptococcus viridans has been isolated from prostates and seminal vesicles in man; when injected into experimental animals, it shows a marked tendency to localize in tissues of the animal comparable to those of the patient which were diseased. These organisms will not grow aerobically, and such cultures, taken alone, are therefore misleading. The routine procedure should include both aerobic and anaerobic cultures.

Pathology. Whatever the organism may be, infection is definitely present; and every infection produces a definite inflammatory reaction in the tissues. This consists of areas of round cell infiltration throughout the structure of the gland. As connective tissue replacement progresses and fibrosis occurs, many of the tubules become occluded and the acini become distended with debris; drainage of the glands thus becomes blocked. As the fibrosis advances, sensory nerves may become impinged, producing perineal pains and itching. Following a long period of infection, the fibrosis may involve the whole gland, and a small hard prostate result.

More acute conditions may cause swelling of the prostate gland and seminal vesicles, resulting in large tender masses, which, by their pain, may simulate acute appendicitis; or by their mass, may completely block the intestinal track. A rectal examination should be made in all cases of suspected appendicitis or intestinal obstruction.

When areas of the gland lying below the bladder floor are involved, tranverse contractions may result, and ridges will appear in the floor of the bladder. These are the inflammatory types of median bars, and are a frequent cause of urinary obstruction.

Symptoms. Culver divides the symptoms of chronic prostatic infection into four main groups:

1. Urinary.
2. Sexual.
3. Referred.
4. Metastatic.

The urinary group includes those whose complaints are frequency, dysuria, nocturia, incontinence and other changes of urinary control.

The sexual group presents all types of impotency, sexual inferiority and the usual complaints of the sexual neurasthenic.

The referred group includes those complaining of low backache, rectal and perineal pains. According to Head, the nerve supply to the prostate is from the sympathetic and parasympathetic fibres arising from the tenth dorsal to the third sacral segments. Thus, it is possible for a prostatic pain to be referred to any part of the body below the diaphragm. This pain may be the result of tension on the prostate gland from swelling within its capsule, or impingement of the nerve, within the gland, by fibrosis.

Von Lackun has reviewed 850 cases of low bachache associated with prostatitis or seminal vesiculitis. All cases in which the backache could be attributed to any other cause, such as arthritis of the spine, trauma, sciatica, sacro-iliac strain, were excluded from the series. There remained 301 cases. The average duration of the backache in this entire group was five years. The pain was variable in character, sometimes only a discomfort, other times a stiffness, burning, bearing down ache and soreness. Of those who received treatment directed toward the prostate, over 90 per cent. became symptomatically well or definitely improved. This emphasizes the importance of investigating the prostate in every case of low backache.

Rectal pain is frequently the first complaint. It may be of sharp shooting character or, more often, a dull ache noticeable particularly when the patient has been sitting. Pressure from feces or gas in the rectum aggravates this pain, and emptying the lower bowel relieves it.

The metastatic group includes those where distant parts are diseased by toxins or infections borne by the blood stream from the prostate. These conditions are so important that they should be enumerated; they have been proved to be of focal origin and include: neuritis, ocular infections, secondary anemia, backache, low abdominal pain, vasomotor skin diseases, functional gastric complaints, and torticolis.

In producing these disturbances, the prostate is usually associated with other foci, but it may act solely by itself. This latter statement is not accepted by some investigators; they feel that the prostate acts as a focus of infection only so long as other foci exist to feed it.

Diagnosis. Symptoms may point out the diagnosis of prostatitis but it must be confirmed by digital examination through the rectum and a microscopic study of the expressed secretion. Because the prostatic glands may be occluded, a single negative examination should not be final; repeated massage may open these occluded tubules and reestablish drainage. An examination then will show pus cells, bacteria and debris, the evidences of infection.

The size of the prostate is no indication of the amount of the infection present in the gland, and the number of pus cells found in the expressed secretion is not a necessary index to the virulence of the microorganism.

Prostatitis may be graded according to the severity of its clinical symptoms, or according to the number of pus cells contained in the expressed secretion. Thus:

Grade 1. From five to ten cells per high power field.
Grade 2. From ten to fifty cells.
Grade 3. From fifty to one hundred and fifty cells.
Grade 4. More than one hundred and fifty cells.

The presence or absence of pus cells in the urine is of no diagnostic importance; however, pus cells are usually present. The blood count shows nothing characteristic, often, only a mild secondary anemia.

Treatment. In management of prostatic infections, Pelouze makes some rather fixed rules:

1. Prostatic infections cannot be permanently cleared up so long as the casual foci remain.

2. Dental and tonsillar infections are the usual ones to be eradicated; and teeth must be rechecked at frequent intervals because new infections are prone to appear.

3. With these eliminated, the gall-bladder and gastro-intestinal tract should be searched for casual foci.

4. There should be an improvement in the pain of neuritis and arthritis within four weeks treatment, and an improvement in the prostatic secretion within six weeks. If this does not result, or if there is a recurrence, then some other foci must still exist.

The universally accepted treatment is properly applied digital massage at proper intervals. This massage must be gentle but thorough; it should not be repeated more often than twice a week, and must be omitted if followed by severe reaction. These reactions consist of chills, elevation of temperature, and increased pain in distant parts. They correspond to a protein or

vaccine reaction; their severity must be a guide to future treatment.

In patients with tuberculosis or with acute eye infections, massage should not be carried out, else irreparable harm may be done.

Massage may or may not be followed by instillation of weak silver solution into the urethera.

Rectal irrigations of hot water, previous to massage, are recommended by Wright, with the idea that prolonged heat around the prostate softens and tends to liquefy the pent-up purulent secretion in the follicles. Diathermy may be similarily employed.

Kohlman dilators were formerly used to dilate the posterior urethera and press out occluded follicles, but, at the present time, their use is considered too harsh.

In cases where the Streptococcus is the offending organism, autogenous vaccine seems to be very helpful; in other cases, vaccines do not give consistent results. Where the Staphylococcus predominates, intravenous injections of small doses of Neoarsphenamine are said to have excellent bactericidal effect.

Where median bar obstructions are of inflammatory origin, conservative treatment, directed toward the underlying prostatic infection, should be continued until proven of no benefit.

The goal of treatment should be the relief of the complaining symptoms and, if possible, the disappearance of pus cells in the prostatic secretion. This last is rarely obtained. Examinations should be repeated frequently during a period of several years.

Summary. Chronic prostatic infections are frequently overlooked because of incomplete examinations.

Their recognition is important. They must be included with the teeth and tonsils to form the most important members of the focal infective group in the male.

One-third of all men over thirty-five carry infected prostates.

The gonococcus plays little part in their etiology. Other microorganisms, particularly the Staphylococcus and Streptococcus, are the usual ones found and they are believed to come from primary foci elsewhere in the body.

Chronic prostatic infections, being secondary to infections elsewhere, will not clear up until these foci have been eradicated.

Repeated prostatic massage seems to be the most effective procedure in their treatment.

303 North Main Street.

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DISCUSSION

Dr. Harry A. Durkin, Peoria: Dr. Boswell has covered a timely subject in a very thorough manner. The prostate is the "forgotten man" in the field of focal infection. The figures which he quotes, that "35 per cent. of all prostates are infected and 70 per cent. of individuals who present symptoms of focal infection have infected prostates," are truly amazing. I am sure that this situation is not adequately appreciated by the medical profession at large. It is important therefore that we include the prostate in our search for foci of infection.

In this connection, I would re-emphasize what he says about not being content with one massage. Not infrequently, pus is obtained only after two or three attempts. In order to illustrate several of the more important points it might be profitable to cite a few cases.

Case One is a young man of twenty-six with a three years' history of pain and swelling in the ankles. He had never had gonorrhea. Tonsillectomy, extraction of teeth, drugs, and physiotheraphy had been of no avail. When seen in 1930, he was obviously below par. There was a definite secondary anemia and definite arthritis of both ankles. The prostate was boggy and the secretion showed much pus. He made an uneventful recovery with routine biweekly massages. He illustrates the long interval which may elapse between the onset of symptoms and the eventual discovery of the true focus of infection.

Case Two is a young man of twenty-eight who developed a severe iritis. Dental films were negative. Tonsillectomy, one week after onset, resulted in a brief improvement and was followed by an exacerbation with

additional involvement of the uveal tract. He was referred for further investigation and examination disclosed a badly infected prostate. Routine massages resulted in a progressive improvement and restoration of his eye to normal. Incidentally, a chronic low backache from which he had suffered for a number of years completely disappeared.

Case Three is a patient of forty, who in 1931 developed a pyuria. Careful urological examination ruled out everything except a moderately hypertrophied and badly infected prostate. Routine massages were instituted. Within eight hours after his tenth massage, he developed a severe pain in his right eye with a definite chill and a temperature. Within twenty-four hours, he had a moderately severe iritis. He illustrates one of the possible dangers of prostatic massage.

In conclusion, it would seem that the prostate, which is such a frequent offender and which lends itself so readily to examination, should be among the first foci to be investigated in all men who present symptoms of focal infection.

OCULAR MANIFESTATIONS IN TRYPARSAMIDE TREATMENT OF SYPHILIS.*

LEO L. MAYER, M. S., M. D.,
AND
R. DENTON SMITH, B. S., M. D.
CHICAGO

Tryparsamide is a pentavalent arsenical compound of great value in the treatment of syphilis of the central nervous system. The drug was first derived from atoxyl in 1917 by Jacobs and Heidelberger[1] of the Rockefeller Institute. The strikingly beneficial effect of the new drug, particularly in the treatment of paresis, was established in the clinical studies of Lorenz and his associates in 1923.[2] The following year Brown and Pearce[3] published their important pharmacologic study of the properties of tryparsamide in the experimental animal. It was soon demonstrated that this derivative of atoxyl, like its precursor, had a tendency to produce visual damage, probably because of selective affinity for the optic nerve. This was emphasized by the preliminary report of the Council on Pharmacy and Chemistry of the American Medical Association.[4]

As the drug came into wide clinical use numerous reports appeared which confirmed this experimental observation, and leading syphilologists urged caution in its administration—particularly in cases where there was any preexisting lesion of the optic tract. Today with tryparsamide universally accepted as the most effective chemotherapeutic agent in the management of neurosyphilis, close cooperation between the syphilologist and ophthalmologist and the routine ophthalmologic study of every patient with neurosyphilis is most essential.

From Johns Hopkins came the first careful and thorough evaluation of visual disturbance made by Woods and Moore[5] as a separate contribution of the results over a four year period.[6] These investigators divided ocular disturbances into two classes, subjective and objective. To each class the symptoms of dim or dazzling vision were common. Ophthalmologic examination was entirely negative in the subjective class. In the objective class the outstanding feature was the constriction of visual fields for form, without scotomas, and with or without diminution in visual acuity. In the first class they felt that there should be no hesitancy in continuing the drug but advised permanent withholding in the second class. In 241 patients 10.2 per cent. developed reactions of the subjective type and 5.5 per cent. of the objective type.

In September, 1924, was published the report of a year's use of the drug by Ebaugh and Dickson.[7] Nearly one-third of the cases selected for treatment were ruled out because of what was considered contra-indicative ophthalmologic findings. Only one case treated with tryparsamide showed optic atrophy after treatment was begun. Patients having visual complaints but no objective findings during treatment, were continued and no amblyopia resulted. The next report from an ocular standpoint came from Lillie[8] at the Mayo Clinic. He divided his cases as follows:

1. Ocular change in *untreated* syphilis.
2. Ocular changes in syphilis treated with arsenicals *other than* tryparsamide.
3. Ocular changes in syphilis treatment *with* tryparsamide.

In the first group 50 per cent. showed changes. In the second group 12 per cent. had visual changes and 20 per cent. perimetric field disturbances. In the third group out of 114 cases only 13 patients or 11 per cent. had visual disturbances, 9 of which were entirely subjective; 4 patients or 3 per cent. had decreased vision

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and interference with perimetric fields. He concluded:

1. Changes in vision and perimetric fields are much greater in untreated syphilis.
2. Ocular changes occur as frequently under arsphenamin as with tryparsamide.

Following this Cady and Alvis[9] drew the following conclusions from their work:

1. Tryparsamide can be used by experienced persons with comparative safety on patients having normal optic tracts.
2. Patients with optic involvement such as contracted fields or abnormal fundi, are more liable to injury by treatment than normal patients, but show favorable response to treatment if properly controlled.
3. The most important signs of adverse action of the drug on the optic tract are subjective dimness of vision, flickering or shimmering sensations or flashes of light; also objective diminution in the visual acuity, contraction of the visual fields and changes in the fundi.
4. The occurrence of subjective symptoms should be thoroughly investigated for an objective basis. If no objective signs are found, tryparsamide may be continued with caution. The presence of objective findings is a contra-indication for further tryparsamide for at least one month, when it may usually be resumed.

Dancy[10] had the following to say:

"It is my experience that changes in vision and fields are more extensive in untreated syphilis than in cases treated with tryparsamide. All the ocular changes take place as frequently during the use of other arsenicals, and the use of tryparsamide is not contra-indicated in my opinion where we have fundus changes. And it is my opinion that changes in vision and fields are temporary, and that the value of tryparsamide with its penetrability and selectivity for new tissue outweighs any possible objection to its use in any cases of syphilis of the central nervous system."

Neff[11] properly cautions as to conclusions drawn from a limited number of cases. Further he remarks that one sees a fair percentage of cases showing improvement in visual and in ophthalmoscopical findings in the course of tryparsamide therapy and in some cases he gained the impression that the therapeutic response in the optic tract has been better than that noted under arsphenamine and neo-arsphenamine. From our own state Dr. Roth[12] of Kankakee reported that tryparsamide may be given in neurosyphilis with safety to the optic tract providing the patient is closely observed by the ophthalmologist. Only 2 per cent. of the 1,254 cases of neurosyphilis treated with tryparsamide as seen by Casten[13] had permanent visual damage. He had much success in using Kubie's[14] forced drainage of the spinal fluid in cases where visual disturbances occurred.

In reviewing for you the history of the use of tryparsamide it has been necessary because of the limited time to hit only the high spots, and thus many interesting references had to be omitted. J. Earle Moore,[15] chief of the syphilis clinic of Johns Hopkins hospital, and recognized as one of the outstanding syphilologists of this country, has recently published a brilliant and authoritative monograph on the syphilitic optic atrophies. He finds the entire subject in a state of much confusion and recommends, in order to clarify the clinical situation, a most careful study from the standpoint of pathologic physiology of the eyes, of a large number of syphilitic patients in all stages of the infection and with all types of neurosyphilis, the patients to be closely followed and periodically reexamined.

It is our hope that we have, in a measure, fulfilled this recommendation and we offer our observations as a preliminary report to which subsequent reports will be added in years to come concerning this same list of patients.

The present clinical study of a series of 87 patients with neurosyphilis undergoing tryparsamide therapy was conducted at the Public Health Institute of Chicago during the period of approximately one year. This research was made possible through the courtesy of Dr. Leon Bromberg, the director of the syphilis division. The cooperation of the clinic chiefs and members of the professional staff of the Institute in furthering this study was whole hearted and deeply appreciated.

Patients are quite thoroughly studied in this clinic before treatment is instituted. Every patient with neurosyphilis is examined by the staff ophthalmologist before tryparsamide is given. If any ocular symptoms develop during treatment, the patient is again referred to the consultant for a complete appraisal before therapy is resumed.

Although every effort is made at the Institute to individualize the treatment of patients in the light of their particular problems and established tolerance, it may be stated that in general the average uncomplicated case of neurosyphilis is given intermittent courses of therapy as follows: Two weeks of preparation with bismuth and iodides. Then, during the following two months eight injections each of bismuth salicy-

late (average dosage 0.2 grams) intramuscularly, and tryparsamide (average dosage 3.0 grams) intravenously, are concurrently administered. The patient is then rewarded with a month or six weeks' rest from treatment before another similar course is undertaken. The patient is routinely studied by the ophthalmologist at the beginning of each course. Since one of us (R. D. S.) was the staff ophthalmologist at the Institute during the period covered by the present clinical study, complete control of the patients was maintained, and frequent examinations were possible.

For the sake of convenience we have grouped our series of eighty-seven cases in the following five diagnostic categories: 1. Optic atrophy, 15 cases; 2. Paresis, 14 cases; 3. Tabes dorsalis (without optic atrophy), 20 cases; 4. Meningovascular syphilis, 4 cases; 5. Asymptomatic neurospyhilis, 34 cases. The ocular examinations were of three kinds, measurement of corrected visual acuity, peripheral visual fields for white and red, and evaluation of the optic disc with the fundus colorimeter.

This last named examination requires some explanation. In 1919 Dr. Martin Cohen of New York City presented his fundus colorimeter before a meeting of the American Academy of Ophthalmology and Otolaryngology.[16] It consists essentially of an electrical ophthalmoscope having a wedge colored with magenta interrupting the beam of white light entering the patient's eye. By turning the wedge the optic disc is saturated with varying degrees of a red coloring, and thus the deviation in the color of the disc from the normal is made measurable. Through the kindness of Dr. Cohen we were able to use his original instrument, a separate report of which will be found in a publication by one of us (L. L. M.).[17] These cases of syphilis which we are reporting were all under tryparsamide therapy during the period of our

1. THE GROUP WITH ASYMPTOMATIC NEUROSYPHILIS.

Case No.	Fields	Vision OD—OS	Courses	1st Treatment	Reg	Age	Reactions	Colorimeter			
22750	OK	20/20—20/20	5	1922	+	37	0	10/11			
27470	OK	20/30—20/30	6	1927	+	41	0	14/14	12/9		
90789	OK	20/30—20/30	4	1912	+	40	0	12/12	10/10	10/18	9/8
114323	OK	20/20—20/20	3	1929	+	29	0	8/8	8/8	8/8	
128213	OK	20/20—20/20	7	1931	+	35	Subjective	20/20	10/20		
133915	OK	20/20—20/20	2	1924	+	28	0	10/10			
124481	OK	20/20—20/20	6	1930	+	39	0	8/8			
128081	OK	20/20—20/20	7	1931	+	30	0	10/11		/	
122577	OK	20/20—20/20	10	1930	+	50	0	8/8	11/12		
135441	OK	20/20—20/20	4	1931	+	31	0	9/10	8/8	9/10	8/9
136331	OK	20/20—20/20	3	1929	—	28	0	10/10	10/10		
137028	OK	20/20—20/20	1	1932	—	42	0	10/12			
138599	OK	20/20—20/20	0	1932	0	27	0	8/8			
137316	OK	20/20—20/20	1	1932	—	43	0	10/8	10/8		
124481	OK	20/20—20/20	7	1930	+	40	0	8/8	8/8	10/8	8/8
138875	OK	20/20—20/20	2	1932	+	40	Mod. severe	8/9	12/11		
124253	OK	20/20—20/20	1	1930	0	40	Mod. severe	8/8	8/8		
86014	OK	20/20—20/20	6	1923	+	32	0	10/10			
122210	OK	20/20—20/20	5	1930	+	42	0	8/8	8/8		
122577	OK	20/20—20/20	10	1930	+	50	0	11/12	12/12		
129229	OK	20/20—20/20	3	1930	0	19	0	10/10	10/10		
32184	OK	20/20—20/20	11	1923	+	31	At end of each course	9/8	9/9		
135603	OK	20/20—20/20	3	1932	+	27	0	8/8			
8190	OK	20/20—20/20	6	1921	+	46	0	8/8	8/8	5/5	
79380	OK	20/20—20/20	10	1927	+	39	0	8/8			
79573	OK	20/20—20/20	7	1917	+	36	0	8/8			
28889	OK	20/20—20/20	3	1931	+	42	0	8/8	8/8		
19487	OK	20/20—20/20	3	1924	0	37	0	8/8			
28786	OK	20/20—20/20	4	1931	+	35	0	9/9	9/9		
27289	OK	20/20—20/20	2	1930	0	26	0	8/8	9/9		
30618	OK	20/20—20/20	1	1932	+	32	0	9/9	9/9		
29853	OK	20/20—20/20	1	1929	+	22	0	10/10			
27921	OK	20/20—20/20	2	1929	0	22	0	8/8	8/8		
19487	OK	20/20—20/20	3	1928	0	38	0	7/8	8/8		

2. THE GROUP WITH MENINGE-VASCULAR SYPHILIS.

100929	OK	20/20—20/20	5	1928	+	46	0	19/15	16/10
138965	OK	20/20—20/20	0	1931	+	45	0	8/8	8/8
23379	OK	20/20—20/20	3	1922	+	32	0	8/7	11/9
133957	OK	20/20—20/20	4	1930	+	51	0	10/10	10/10

3. THE GROUP WITH TABES DORSALIS (WITHOUT OPTIC ATROPHY).

Case No.	Fields	Vision OD—OS	Courses	1st Treatment	Reg	Age	Reactions	Colorimeter
K7	OK	20/30—20/30	11	1928	+	47	0	10/14 10/14 10/14 10/14
57934	OK	20/30—20/30	15	1925	+	56	3 subjective	10/14 10/14
90330	OK	20/30—20/30	8	1928	+	41	subjective	12/10 5/8 6/8 8/9
100472	OK	20/20—20/20	13	1928	+	46	0	10/5
114605	OK	20/30—20/30	8	1929	+	45	0	8/5 9/11
130202	OK	20/30—20/30	3	1928	+	61	0	8/8 8/8 8/8
123153	OK	20/20—20/20	8	1930	+	48	0	8/8 8/8 8/8
130073	OK	20/20—20/20	5	1930	+	40	0	8/8
123555	OK	20/20—20/20	7	1930	+	57	hysterical field	10/14 10/18
123742	OK	20/20—20/20	8	1930	+	34	0	12/10
136133	OK	20/30—20/20	4	1932	+	42	0	8/8 /8/8 8/8
123163	OK	20/20—20/20	9	1930	+	33	0	8/8
135845	OK	20/20—20/20	3	1931	+	35	0	8/8 8/8
137490	OK	20/20—20/20	1	1932	+	49	0	8/8 8/8
86590	OK	20/20—20/20	18	1924	+	50	0	10/8 8/8 10/10
47745	OK	20/20—20/20	3	1924	0	42	0	11/12
87102	OK	20/20—20/20	9	1926	+	56	0	10/10
28221	OK	20/20—20/20	4	1927	+	36	0	7/7 7/7
28968	OK	20/20—20/20	3	1921	+	47	0	8/8 9/8 8/8
25104	OK	20/20—20/20	1	1930	+	52	0	8/8 10/10

4. THE GROUP WITH PARESIS.

Case No.	Fields	Vision OD—OS	Courses	1st Treatment	Reg	Age	Reactions	Colorimeter
815	OK	20/30—20/30	3	1915	+	53	None	8/8 10/12 10/10
128431	OK	20/20—20/20	8	1928	+	39	None	6/8 10/8 10/11 10/8
131013	OK	20/30—20/30	6	1911	+	39	None	9/6 8/10 10/10 10/10 9/10 9/10 10/10
135845	OK	20/200—20/30	5	1932	+	35	None	15/8 12/8 8/6 10/8 9/10
136044	OK	20/30—20/30	3	1920	+	45	None	5/10
129888	OK	20/50—20/200	2	1931	+	44	None	10/10 8/8 10/8 8/8 10/10
56171	OK	20/20—20/20	8	1921	+	43	None	10/15 10/12
11055	OK	20/20—20/20	2	1925	+	58	None	14/15 12/13
121384	OK	20/30—20/30	7	1915	+	49	None	12/10
130768	OK	20/20—20/20	7	1925	+	37	None	8/8 10/8 9/9
113970	OK	20/20—20/20	8	1929	+	45	None	10/10 10/10
43502	OK	20/20—20/20	5	1922	+	35	None	10/10 8/9

5. THE GROUP WITH OPTIC ATROPHY.

Case No.	Fields	Vision OD—OS	Courses	First Treatment	Reg	Age	Reactions	Colorimeter
113840	OK	20/20 20/20	10	1929	+	55	0	27/20 15/15 14/18 24/18 19/16 14/26
122544	Slight Contraction	20/50 20/40	2 (3-1gm doses only) Partial course	1930	+	50	0	19/16
127167	Left-blind Right-Contracted to 10°	— 20/40 0		1931	+	32	0	25/35 16/26 16/30 25/28 19/26 20/25 22/25 19/23 19/22 18/22
139465	No fixation	No light perception either eye	0	1929	—	46	0	25/22
138338	Moderate Contraction	Fingers at 2 ft. either eye	0	1932	—	55	0	20/20 15/20
136844	Rt.: Contracted to 10° Left: Not Obtainable	10/200 P. L.	0	1917	+	39	0	21/21 22/20 15/18 28/22 16/18 18/24 24/19 21/18
77173	OK	20/200 20/100	17	1915	+	49	0	20/20 20/19
100971	Rt.: Normal Left: Not Obtainable	20/30 P. L. (?)	6	1910	+	54	0	12/ 12/ 12/ Left disc not visualized.
114094	Both Contracted to 60°	20/20 20/20	6	1929	+	47	0	15/15 15/15 15/20
52351	Both Contracted to 60°	20/30 20/30	16	1925	+	56	0	15/15 15/20
129491	OK	20/20 20/20	4	1921	+	57	0	10/10
90944	OK	20/30 20/30	5	1923	+	50	0	16/19
33589	O.D.: Central Only O.S.: Normal	O.D.: Faulty L. P. O.S.: 20/30	11	1919	+	56	Definite reaction	14/10 14/10 12/12 12/12 10/10
131156	Both Contracted to 50°	10/200 20/30	2 injections (2 gm. each)	1931	+	44	Subjective reaction	21/22

clinical study. The charts of each of the five groups show the patient's registration number, visual fields, visual acuity, number of tryparsamide courses of treatment, regularity of treatment, age of the patient, reactions, and finally measurements with the fundus colorimeter at various periods during the courses of the treatment. The normal for the fundus colorimeter is considered as between 8 and 12 on the arbitrary scale of the instrument, higher figures meaning atrophy.

The Group with Optic Atrophy. All cases in this group were diagnosed optic atrophy before being included in this investigation. All showed optic atrophy either with the ordinary ophthalmoscope, with the fundus colorimeter, by visual fields changes, by loss of visual acuity, or by any two or more of the examinations combined. The longest period any of these fifteen cases had had treatment was 22 years, the shortest 1 year, the average 5 years. The greatest number of tryparsamide courses was 17, the least one, the average number being 6 courses. A course usually consisted of 8 injections of from 2 to 3 grams of the drug. One patient had only subjective reactionary symptoms, while 3 had objective findings. In the latter group two returned entirely to their origial state, the third consistently showed contracted visual fields although the degree of limitation was difficult to interpret because of the unreliability of this particular patient. In no case was there a decrease in visual acuity or in the colorimeter readings.

The Group of Paretics. The longest period any of these fourteen cases had had treatment was twelve years, the shortest one year, the average four years. The greatest number of tryparsamide courses was 8, the least 1, the average number being 5 courses. Only one case showed ocular reactions of any kind, this consisting of a reduction of the form field for white to 20°, the form field for red to 10°. With a short rest period the fields returned to normal and subsequent treatments showed no reactions.

The Group with Tabes Dorsalis without Optic Atrophy. The longest period any of these twenty cases had had treatment was twelve years, the shortest one year, the average four years. The greatest number of tryparsamide courses was 18, the least 1, the average number being 7 courses. One patient had subjective complaints at three periods during 15 courses. One other patient had one subjective reaction. Another patient had a diminution in the size of the visual field for the left eye which however returned to normal although the colorimeter continued to register this disc outside the normal limits. Visual acuity was changed in none of the cases.

The Group with Meningo-Vascular Syphilis. The longest period any of these four cases had had treatment was ten years, the shortest two years, the average five years. The greatest number of tryparsamide courses was 5, the least 1, the average number being 3 courses. No reactions were noted in this group, although the fundus colorimeter recorded slight palor in the right disc of one patient. No case had any decrease in visual acuity.

The Group with Asymptomatic Neurosyphilis. The longest period any of these thirty-four cases had had treatment was twenty years, the shortest one year, the average five years. The greatest number of tryparsamide courses was 11, the least 1, the average number being 5 courses. Four patients had subjective symptoms only. None of this group had any objective findings, the visual fields, visual acuity and colorimetric findings all being well within the normal.

Comment. We desire to call your attention to several details observed during the treatment of these cases. Subjective symptoms were often noted when the dosage was increased from 2.5 grams to 3.0 grams. These patients were allowed to see their records and were forewarned concerning ocular symptoms. By recording 3.0 grams while giving only 2.5 grams or in some cases a sterile hypo, we were able to definitely establish that complaints of this nature were often psychic. A recent report from England by Lees[18] who treated 613 cases of neurosyphilis is of interest to quote, "We are satisfied from our results that the complications are of minor importance," and "we are satisfied that it (tryparsamide) is superior to any of the other arsenicals in arresting the progress of syphilis of the nervous system." No attempt was made in our study to compare the results with any other form of treatment. In none of the 15 cases of optic atrophy treated was there a decrease in the function of the optic nerve. We were concerned entirely with the effect of the drug on visual ability and no record has been made of the patient's

general reaction. In those cases having subjective symptoms of blurred vision without loss of visual acuity or of flashes of light without demonstrable changes in visual fields or the color of the discs, a reduction in the dosage prevented these disturbances and treatment could be continued. Cases having optic atrophy before begining tryparsamide treatment under our supervision showed no increase in the degree of atrophy, and we have been impressed by the fact that there exists a certain maximum pallor of the discs which is reached very quickly in the progress of syphilis attacking the optic nerve which shows no tendency to be enhanced under further treatment. Whether this is due to the drug preventing the progress of the atrophy or simply that it is the maximum pallor such as nerve head will attain, we are not prepared to say at present. Where paresis has become advanced subjective tests cannot be depended upon, and it is here that objective evaluation of any color changes in the discs by the ophthalmoscope or the colorimeter are of great importance.

CONCLUSIONS

From a preliminary consideration of 87 patients observed under tryparsamide treatment over the period of one year it is our impression:

1. That tryparsamide, intelligently administered, causes no increase in the atrophy of the optic discs, where syphilis has previously caused changes.

2. That tryparsamide causes no optic atrophy in cases where the action of syphilis has not affected the discs.

3. That the use of tryparsamide under proper dosage and supervision should have only beneficial effect on the optic nerve.

4. That close cooperation between the syphilologist and ophthalmologist is essential in the modern treatment of neurosyphilis.

104 South Michigan Avenue.

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DISCUSSION

Dr. Louis Bothman, Chicago: I would like to congratulate Dr. Mayer on his paper. It is a very fine report. I should like to ask him about the subjective symptoms of blurred vision, whether this is transitory and part of the general reaction, or whether the subjective symptoms are lasting. There have been reports of blurred vision in treatment of luetic patients with arsenicals which was due to a spasm of the ciliary muscle. This was relieved by atropine after three or four days. I wonder if the subjective reactions he reports may be of the same nature.

Dr. Hallard Beard, Chicago: I should like to ask Dr. Mayer this question, which I consider to be of practical importance. If he has a patient referred from a neurologist or syphilologist with a diagnosis of neurosyphilis, and is asked for an opinion as to whether or not tryparsamide may be safely given, can he by any observation of the optic disc or testing of the fields of vision, say whether this particular patient will tolerate tryparsamide? Must he not wait until some tryparsamide has been given in order to form an opinion as to whether or not the patient will tolerate the drug?

Dr. Leo L. Mayer, Chicago (closing): In answer

to Dr. Bothman's question, this blurred vision these patients complained about was a subjective thing, and had nothing to do with any general complaint. It was purely a factor of their visual apparatus. They complained that when they looked at test objects things seemed blurred. We did test them out to see if it was due to any effect on the ciliary muscles, but none showed that.

To answer Dr. Beard, it is quite natural that in order to find out whether any person is going to show any reaction to a drug, you will have to try the drug, and there is no way in which any one can say whether or not the patient will react to tryparsamide. What I want to bring out is the fact that in a large series of cases the percentage of danger is very meagre and no greater than in the use of some other preparations. No one can tell when a patient will have a reaction from any sort of drug unless he actually tries it.

RADIOTHERAPY AND SURGERY IN THE TREATMENT OF MALIGNANCY*

H. D. JUNKIN, M. D.

PARIS, ILLINOIS

During the past two decades the incidence of malignancy has increased rapidly. That this increase is due in part to a more accurate diagnosis and certainly in part to an actual increase in its frequency is quite generally agreed. Certainly, we will admit that malignancy constitutes one of the most, if not the most, serious problem the profession has for consideration.

It is my desire to discuss the subject from the standpoint of the surgeon in rural districts. Scattered throughout rural districts in most of our states are numerous hospital units. Many are located at the county seats. At any rate, these units represent smaller centers for the accommodation of hospital patients in their respective locations, and centers for the study of our problems. Those units are, for the most part, well equipped for handling surgery, obstetrics, and some medical cases. However there are many which are not provided with proper equipment to cope with the problem of malignancy. Personally, I do not feel that a surgeon should accept the responsibility of treating malignancy without the proper means for attacking the discase from its many angles. Radiation, if second at all, is second only to surgery in treating malignancy. Therefore, proper x-ray therapy equipment, access to radium, together with the approved electrical cutting currents appears to be as essential as an operating room with a generous outlay of surgical instruments.

During the past three years at the Paris Hospital forty-seven per cent. of all cases treated by radiation were for malignancies. All malignant cases have had radiation combined with surgery or radiation alone. Briefly, we treat our malignancies as follows: The epithelomata of the skin are radiated with x-ray, no filter, full erythema doses. Occasionally, these are followed by electro-coagulation. In extensive lip carcinomata we have coagulated freely, then followed with full erythema x-ray doses. Of course, the usual glandular dissections are carried out when indicated.

All malignant breast cases are radiated with x-ray before and after surgery. The electrotome is used for the dissection and the bleeding controlled by the coagulating current. The implantation of radium seeds as described by Soiland of Los Angeles is well worth consideration.

Malignancy of the stomach has been very unsatisfactory. We radiate before and after surgery.

Our colon cases have been very satisfactory. We radiate before and after surgery. I have one case living six years after removal of the transverse colon. The patient was 28 years old. The entire transverse colon was removed and an end to end anastomosis completed at a one stage procedure. Here radiation followed the surgery as the preoperative diagnosis was appendicitis with abscess and operated on as an emergency.

Malignancy of the uterus at once opens a subject which in itself would occupy many hours to even scratch the surface. Suffice to say that in all malignancies above the cervix, we radiate thoroughly with x-ray before and after radical hysterectomy. In malignancies of the cervix we have had much better results with radiation alone. We use the conventional radium pack in the *cervical* canal and implant the needles in the cervical tissues. We always follow with deep x-ray therapy.

In the inoperable malignant case, we radiate and radiate freely. Des Gardines states that if radiation did nothing more than allay the pain of malignancy, this in itself would justify its use. It does much more. The discharges cease, hemorrhage is allayed, and the process is certainly delayed. We have followed the suggestions of the late Willy Meyer of New York in a

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few of these cases. Large doses of calcium has been given, thyroid and para-thyroid extract in moderate doses; dilute hydrochloric acid by mouth, and acidulation by inhalations of 5% CO_2 in oxygen. Our experience is too limited to offer an opinion but we are rather inclined to believe that the treatment as outlined by Meyer has some merits.

I wish to give here a few cases which are quite typical of the problem under discussion.

Case 1. Mrs. C. U., 59 years old was operated on by my predecessor, Dr. Roland Hazen, eight years ago, March 26, 1925. The preoperative diagnosis was uterine fibroids. The operative notes follow: "Supravaginal hysterectomy. Both tubes and ovaries removed, but cervix retained. Several growths within fundus, size of grapefruit." Dr. B. G. R. Williams' report on the microscopic study of tissue was adenocarcinoma. She was given radium intravenously. On February 9, 1932, seven years after the hysterectomy, the patient returned to us with a carcinoma of the cervix. On February 10, 1932, one hundred milligrammes (100 Mgs.) of radium element was used in cervix. Four needles of 12.5 Mg. each were placed in the cervical tissue and 50 Mg. in the cervical canal. The latter was screened with 0.8 Mms. of gold and 0.8 Mms. of rubber. As the cervical canal was dilated, pus and degenerating tissue escaped. The cervix bled freely and the tissue was hard and infiltrated. Pack left in situ for 24 hours. Retention catheter in bladder and gauze pack saturated in normal saline in vaginal tube to hold pack in place. Discharged from the hospital on 5th postoperative day. *Subsequent course:* Six weeks after the radium implantation, the patient had a very severe hemorrhage which almost exsanguinated her. She was at her home. She made a slow recovery from this hemorrhage and reported to us a month later and x ray therapy using 200 K. V. P. filtered through 0.75 M. M. of Cu. and 1.0 M. M. of aluminum started. Four portals were used directing the rays into the pelvis. At the present time, this patient is free of all symptoms, has gained weight up to normal for her and is apparently in excellent health.

Case 2. Mrs. C. S., aged 57 years. Admitted to the Paris Hospital November 18, 1924, on Dr. Roland Hazen's service. The history directed attention to a distress in pelvis for the past year or more with symptoms of pressure on bladder. Vaginal examination revealed a soft mass in pelvis which felt like a cyst with adhesions about it. At operation, a pseudomucinous cystadenoma with areas of beginning adenocarcinoma was found. The mass, left tube, and ovary were removed. Uterus, right tube and ovary were left. An intravenous radium treatment was given November 26, 1924. She remained symptom-free until July, 1930, when she returned to us with a "Frozen pelvis." She was in great pain and had profuse vaginal discharge and hemorrhage. Deep x-ray therapy was given with 200 K. V. P. Technique. The rays filtered through 0.75 M. M. Cu. 1.0 M. M. of aluminum through four portals. She received a series of such treatments again in August, September, November, and December. In 1931: In January, February, April, July and October. All discharge ceased. The mass diminished rapidly in size and the patient was very comfortable. She died suddenly in December, 1931, evidently from a pulmonary embolism. In these two cases intravenous application of radium for malignancy appears to have been of definite benefit. Each illustrates the palliative effects of radiation.

Case 3. Miss E. P., aged 39 years. Never married. Came to the Hospital February 19, 1932. History indicated that she had noticed a tumor in her abdomen for at least four years. At times the tumor appeared to be larger than other times, but the patient is certain the growth has been progressive. She has had backache, some vaginal discharge and some dysuria. Three days before admission she had a chill, severe diarrhea and temperature. She thinks she has had fever for some time but owing to her faith she has had no doctor until now. The examination of the abdomen revealed at once a mass equal to pregnancy at full term. The pelvis was filled with the neoplasm and it infiltrates into the right pelvis. On February 22, 1932, a direct blood transfusion of 500 cc. was given. At operation, we found the growth to be so extensive, together with the involvement of coils of small intestine, extensive infiltration in right pelvis, involvement of the bladder, etc., that surgery was abandoned. On March 11, 1932, deep x-ray therapy was begun. These serial treatments were given each month for six treatments. The mass receded very rapidly. The vaginal discharge was profuse for about three months and then gradually improved. Now, she does the average amount of work about her home, has a good appetite and the mass is about the size of an average grapefruit. We considered this a mixed tumor with malignant degeneration. Radiation aided us here materially in sustaining our position as surgeon in a household quite skeptical of the value of the medical profession as a whole.

Case 4. Mrs. J. O. W., aged 47 years. Admitted to Paris Hospital December 23, 1931. This patient had been flowing freely for six weeks before admission to the Hospital. She had been feeling ill for about a year and had general aching through hips and legs. Bi-manual examination: The uterus was found freely movable. Cervix smooth. Uterus about double in size. Bright red blood flowed from cervix. Diagnostic curettings showed adeno-carcinoma. The patient was given a full series of deep x-ray therapy to pelvis. Hemorrhage continued and on January 1, 1932, a direct blood transfusion of 310 cc. was given. On January 7, 1932, a second direct blood transfusion of 400 cc. was given. On January 11, 1932, a complete supravaginal hystrectomy was done. The patient made a prompt recovery and has had six complete series of x-ray since surgery. She is well and is symptom-free. X-ray films of pelvis show no metastasis to osseous structures.

Case 5. Mrs. B. W. K., aged 53 years. Admitted to Paris Hospital, January 28, 1932. Has had some

vaginal discharge since climacteric eight years ago. A year ago she began noticing an offensive discharge. A watery vaginal discharge began six months ago. For the past three months blood has been mixed with discharge. The examination of the cervix gave a very typical picture of advanced carcinoma of cervix. The general examination and extensive x-ray study showed no metastasis. Pathological report indicated stratified squamous cell carcinoma. On January 29, 1932, 50 Mg. radium was placed in cervical canal and 4 needles of 12.5 Mg. placed in cervical tissue. Screenings on cervical pack, 0.8 M. M. of gold and 0.8 of rubber. The radium was removed 24 hours later. One month later deep therapy to pelvis was begun. She had eight series of deep x-ray therapy. For a three month period patient was very ill. Then the cervical tissues began healing, discharge ceased and today the patient has gained fifty pounds in weight and does all her work on a farm.

These few cases serve to illustrate some quite typical cases we encounter in the surgical field and illustrate quite clearly the important part radiation plays in the treatment of malignancy.

From the standpoint of the general surgeon, it appears to me that a closer co-operation between the surgeon and the radiologist should be sought. The small communities may not be able to support a full time radiologist but certainly a competent member of the profession can be found in these rural centers who could act under the supervision of a recognized radiologist in one of the larger centers. I do not feel that surgery without proper radiological facilities for treating malignancies is justified. In early epithelomata of the skin, radiation alone is sufficient. It is the author's opinion that carcinoma of the cervix as we see it, usually rather late in rural centers, is best treated with radium and x-ray.

DISCUSSION

E. G. C. Williams (Danville): The part of Dr. Junkin's paper regarding the necessity and desirability of rediation in conjunction with surgery in the treatment of malignancy is beyond argument. He has given the proper viewpoint. In the evalution of various methods for the treatment of malignancy, it is difficult to say which one should name first, whether one should say radiation and surgery or surgery and radiation, because each has its definite field and use and they are clinically inseparable.

In the intravenous use of radium, there is nothing to offer except that it just is not being used in the best cancer centers, except possibly in some experimental work.

Dr. Junkin mentioned the late Dr. Meyer's book, which was published a few months previous to his death. I think that book is the most tragic thing ever published. It contains more unfounded conjectures and more unproven theories are proposed than I have ever seen in print. I think the book is potentially dangerous if nothing else.

The proposition of some competent local physician practicing radiology under the direction of another radiologist reverts back to the idea that the use of radiation in the treatment of disease is a definite medical specialty. It seems to me it is no more possible to do this in a remote section under the direction of a competent radiologist than it would be for a man to practice surgery by mail orders from a competent surgeon.

In the territories where a man cannot specialize in this work, if radiation therapy is to be carried out, somebody must pay the price, and, as Dr. Junkin has done in his own work, take the time and energy to learn the fundamentals of radiation and carry it out himself. If there is no one in the territory who can carry out the radiation, then the best thing is to remove the patient to a place where it can be done. But I certainly couldn't approve of the idea of a remote control radiation therapy. In the few years that I have been associated with it, about sixteen years, I have been firmly convinced that it is a specialty in itself and not a thing to be carried out technically.

In regard to Dr. Junkin's paper and others that have been presented this afternoon, I believe this is one of the finest programs we have had. We have certainly heard some things which will give us a lot to think over until we meet again.

Harold Swanberg (Quincy): Doctor Junkin is to be congratulated on the splendid work and particularly upon his interest in radiation therapy. That surgeons interested in radiology should make a thorough study of the subject has been emphasized by Doctor Crossen in his oration on surgery today. It is most evident that Doctor Junkin has done this.

The question as to the best manner of administering radiation therapy in the average small community is certainly a problem. Upon hearing Doctor Junkin's oration one is greatly impressed by the fact that there is a close union between radiation therapy and surgery in the treatment of cancer and because of this how necessary it is for the average surgeon to increase his knowledge of radiation methods. Cancer patients frequently need both surgery and radiation, and in order that the surgeon may more fully cooperate with the radiologist he must avail himself of the opportunity to learn more about radiation.

We should sound a word of warning about the use of radium in intravenous forms. As Dr. Williams said, it is not used in any recognized cancer clinic. If Dr. Junkin refers to radium itself, in some form of solution, it certainly is highly dangerous. I think the use of radium intravenously for malignancy, is passe.

Gentz Perry (Evanston): I feel that we are all indebted to Dr. Junkin for showing us how much an energetic man can accomplish if he gets up and works. There are two or three things which the doctor has brought out which we should consider carefully. First, I would like to emphasize the warning just sounded

by Dr. Swanberg, whether it be radium, radion, or other radio-active substances, the use of those substances in the general circulation is very questionable. The harm done both experimentally and clinically, I believe, outweighs the good that has been accomplished.

The intravenous use of any radio-active substance for a localized malignancy in any portion of the body is open to very serious question. I wanted to bring this question out before the group. I think we can all agree on a few basic facts, at least, even if we disagree enough to make the meeting interesting. First of all, if we use short wave therapy, x-ray therapy, for its effect upon tissue, I think we will all agree that we can produce a more general effect. We can cover a much wider area of tissue by a fairly homogeneous radiation with x-ray than we can by the ordinary use of radium. If we become multimillionaires we can use a radiant bomb off at a long distance and hit them with several million dollars worth of radium indiscriminately. Perhaps then we may use homogeneous radiation effectively with radium. But until that millennium has arrived we will have to content ourselves with the present economic status of things. I feel that we will all agree upon the matter that we can effect a much larger area successfully with x-ray, high voltage x-ray, two hundred thousand volts or higher, than we may be able to do with radium.

If we use the x-ray to prevent widespread dissemination or try to prevent widespread metastasis, then why should not the x-ray be used among the earliest of our efforts? If we are going to try to prevent metastasis, the sooner we get busy the better. Supposing we feel the case is one that requires surgical treatment, why not use the x-ray in the average case prior to or as nearly as possible coincident with the surgical procedures, and if we are going to use radium, especially if we use it interstitially or where there may be any traumatism of the tissue, why not use the x-ray before we use the interstitial radiation. That is a question which I bring out for your consideration. I certainly enjoyed Dr. Junkin's paper. It started us all thinking.

Benjamin H. Orndoff, Chicago: I am happy to have heard Doctor Junkin's paper and glad for the opportunity to discuss it. Within the last few weeks, it has been my pleasure to attend several meetings where the problems of radiotherapy were discussed. Some of these discussions were of a physical character and the questions of shorter wave x-rays were considered. Some of our more enthusiastic radiologists are endeavoring to advance the information concerning very high voltages and very short wave lengths for x-rays. Others are trying to solve the mystery surrounding the biologic reaction to x-rays of different wave lengths. Still others are including chemical possibilities with radiotherapy, such as intravenous administrations of different forms of chemical products as well as injections directly into the tumor masses. It is hoped that this will accentuate active radiation in the parts desired. Other problems are a more liberal distribution and more universal use of x-rays and radium in medical practice. One of the problems growing out of this demand is to know how to place radium where its application will be of such a character that the results will warrant its use. It must certainly require more than a man with the usual medical qualifications to use radiotherapy effectively. A background of general surgery will qualify a physician to do technical procedures, so the general surgeon will have no difficulty in mastering the mechanical phases of radium application. He must, however, acquire a knowledge of the action of filtered radium in tissue in order that the use of this potent element may aid him in the treatment of malignant disease. There is much to be said about the economic situation surrounding the problems of radiotherapy. Treatments with x-ray and with radium are both expensive to the patient and they should be instituted only in the hands of those who are qualified and trained for this work.

I have known Doctor Junkin and his work in surgery for many years and he is one of the surgeons who has given unsparingly of his time and energy to develop technique in radiology with his surgical practice. I am convinced that he is combining, at the present time, radiotherapy with his work in surgery in a way that is exceedingly useful in the management of malignant disease.

Dr. Junkin (closing the discussion): One can always get a rise out of a radiology group. I brought up the intravenous use of radium simply because I wanted some information It seemed to me, in reviewing my predecessor's work that he had some very unusual responses to this particular treatment. I did not know whether it had any merit or not. I would like some time to see a careful study of this carried out.

Dr. Geschickter of Johns Hopkins University was at one of our Hospital meetings recently. I talked to him about Dr. Meyer's work. He was of the same opinion as Dr. Williams of Danville. However, as I look over Dr. Meyer's work, I feel he is very bold in some of his statements. Yet, as you follow the literature in the treatment of the inoperable carcinomata, large massive doses of x-ray are recommended. Calcium and parathyroid are mentioned. Acidulation treatment is referred to. All of these Dr. Meyer used. After all, perhaps his approach was not so good because he tried to cover too many of the different angles of the question under one group.

As to the country radiologist, I realize full well it is a problem. It perhaps would be very favorable to the committee of the majority who reported recently on Hospital and Medical costs, that all our patients should be sent to centers where they could have group treatment. Most of us do not agree with this. State Medicine is already on the horizon. Dr. Williams suggests that these cases should be sent to the centers to the radiologist. These country folks will not go to the centers. You cannot drive them in. You can tell them about the men who do these things so perfectly, but try to get them in. I have found that in the operative malignant cases you would tell them they should have x-ray and radium and they would say, "We will think

about it." They don't go in and the next you hear is a post-mortem examination. I do feel that some one should be responsible for giving radiotherapy properly in the country community where you cannot have a radiotherapist. I feel it is quite impractical to send these patients in to the centers because they won't go.

I do feel that the surgeon who assumes the responsibility of treating malignancies should be equally responsible in seeing to it that his patient receives the proper preoperative and postoperative radiotherapy.

AN ANALYTICAL STUDY OF SQUINT SURGERY*

M. L. Folk, M. D., F. A. C. S.

Assistant Professor of Ophthalmology, The University of Illinois College of Medicine; Attending Ophthalmic Surgeon, Michael Reese Hospital

CHICAGO

The original purpose of this paper was to evaluate seven years' work of squint surgery performed by the Department of Ophthalmology of the University of Illinois, College of Medicine, in order to check up on our efforts and determine, if possible, which procedure has served us best in given cases. Such analyses are especially desirable in the field of squint surgery, where the problem is infinitely complex and where the mere existence of so many types of operations speaks for the imperfection of the procedures. As our clinic, however, does not essentially differ from most of the eye clinics in this country or abroad, it was deemed advisable to present the paper before this Section in order to invite discussion from its members, most of whom have had a vast surgical experience; hence, this contribution.

Our series consists of 258 case-records, comprising a total of 329 strabismus operations performed from July, 1925, to July, 1932. Some cases have been followed up for a number of years, others only for a few weeks, the longest case under observation being 7½ years. However, only those observed for at least a period of three months from the time of the operation will be taken into account in this study. A good many of the patients have recently been reexamined by the writer and an attempt was made to interview all cases in which the end results could not be definitely ascertained from the records. For this purpose cards were mailed out requesting the patients to return to the clinic. However, due to the shifting tendencies of the population which ordinarily frequents the free clinics and, especially during an economic depression, such as the present, most of the patients failed to respond.

Of the 258 cases studied, 118 were males and 140 females. The ages ranged from 2½ to 60 years, but for convenience of discussion the cases are divided into the following groups: 1. Those less than three years, 3 cases; 2. 3-6 years, inclusive, 29 cases; 3. from 6-14 years, or the school age, 171 cases, and 4. those over 14 years, 55 cases. As seen from this table the greatest majority of the patients, namely 52 per cent., were of the school age, when the operation is, necessarily, performed largely for cosmetic purposes. The number of the pre-school age group, where functional improvement could be anticipated, was only 33, or less than 10 per cent. of the total.

The corrected vision in the squinting eye varied greatly and was grouped into the following: 1. Those having a vision of less than 0.1, 63 cases; 2. vision from 0.1 to 0.3, 84 cases; 3. from 0.3 to 0.6, 55; and 4. over 0.6, 43 cases. In 13 patients the vision could not be obtained on account of young age or lack of cooperation.

As regards the type of deviation, there were 224 unilateral and 34 alternating cases. Of the unilateral, 193 were convergent, in which the right eye was involved 96 and the left 97 times. Thirty-one cases were of the divergent variety, the right eye being involved 10 and the left eye 21 times. Of the alternating type, 29 were convergent and 5 divergent. The degree of deviation presented a great variety, and, in order to facilitate tabulation, was divided into the following groups: 1. A deviation of 10°-20°; of these, there were 92 convergent and 4 divergent cases. 2. A deviation of 20°-30°, 71 were convergent and 8 divergent. 3. Those having a deviation of 30°-40°, 47 were convergent and 18 divergent, and 4. A deviation of 40°-55°, 9 were convergent and 6 divergent cases.

As to the treatment previous to operation no accurate figures could be obtained as most of the patients had been to some other clinic, private oculists or optometrists prior to their appearance at our clinic. Our indications for operative procedures were as follows: 1. Children under the age of 7-8 years were treated conservatively for

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6 months to 1 year, and if the eyes were not straightened by glasses and occlusion, operation was urged, thereby hoping to avoid amblyopia exanopsia and obtain single binocular vision. 2. Children over 8-9 years of age who have not responded to conservative treatment, were advised, but not urged, operation. 3. Adults, whether they have or have not had previous treatment, were advised operation after their refractive status had been ascertained.

We shall now enter upon the most important part of our discussion, namely the types of operations performed and the results obtained. The technique of each operative procedure, as practiced in our clinic, will be but briefly described here, referring the reader to the original articles for a more detailed description. The following types of operations, either singly or in various combinations, were used in this series:

1. Tenotomy. This was usually done by the open method and after the manner of the Von Graefe;[1] i. e., after incising the conjunctiva, the muscle was picked up with a strabismus hook, isolated, and severed near its scleral insertion. In a few instances the Arlt[2] method, or the substitution of forceps for the hook in grasping the muscle, and using the strabismus hook only for reexamination and search for any remaining fibers, was practiced. In most cases the tenotomy was complete, including the check ligaments; in a smaller number, simple, or mild tenotomy was performed, in which case the check ligaments were spared.

2. Partial tenotomy. This was practiced according to the method of Todd,[3] which consists of 2 cuts in the tendon of the muscle on one side, and one on the opposite side, each cutting to the center and being about 5 mm. apart. This not only tends to temporarily weaken the muscle but it also lengthens it.

3. Guarded tenotomy; or tenotomy in which the muscle, instead of being left to its fate, is anchored with a silk suture to the conjunctiva or with a catgut suture to the stump of the tendon.

4. Recession was performed after the method of Jameson[4] with the Wilkinson[5] modification, that is, the tendon was sutured to the sclera with a fine central silk suture, the ends of which emerged through the capsule and conjunctiva where they were tied. The stitch was not placed over the end of the cut muscle, as Jameson does.

5. Advancement. A modified Worth[6] operation was used, consisting of passing a double-armed silk suture through the anterior half of the muscle behind the Prince forceps, where it was tied, and the ends of of the thread passed through the upper half of the sclera, near the limbus, above and below the previous tendon insertion. They were then passed through the conjunctiva and tied. No shortening of the muscle was performed.

6. The tucking operation was of two types. During the years of 1925-27 the Briggs[7] tucking was used which consisted in looping of the tendon and overlying conjunctiva with an elliptical 2x4 mm. silver wire by means of a special clamp-forceps and tendon hook. This was accomplished through a small opening in the conjunctiva, on one side of the tendon, 2-3 mm. from its insertion, through which the special tendon hook was passed and drew the muscle and overlying conjunctiva to a desired degree. However, as the amount of the tuck was uncertain and as it was quite difficult to remove the clamp, necessitating in a good many cases a second general anesthetic, this operation was soon abandoned for the simpler and more accurate Bishop[8] method. The latter's tucker, in the author's own words, "consists of a double standard, each leg of which terminates in a cross bar to form the support for a flat bar hook which operates between the standards, being raised or lowered by means of a thumbscrew." The technique is as follows: isolation of the muscle by means of a squint hook, insertion of the flat-bar hook underneath the muscle and pulling it up as much as desired. A catgut suture is then passed through the upper and lower one-third of the muscle and tied, and the tucker removed. The conjunctiva is then sutured firmly over the tuck with silk, which also passes through the folded muscle to insure its hold.

7. Resection or shortening according to the method of Lancaster. This consisted of isolation of the muscle, applying of Prince's forceps as far back as desired, and cutting the tendon but leaving a 2-3 mm. stump. Two double-armed silk or catgut sutures are then passed from the stump to the cut muscle behind the forceps and tied firmly, after having pulled the muscle over to the limbus. The excess muscle is then cut away and the conjunctiva sutured.

In small degrees of deviation, one muscle only was operated on according to one of the aboxe described procedures. In higher degrees of squint, operations on both antagonists was usually necessary. The following tables give the number of each operation performed and the results obtained in approximate percentages. It must be remembered, as aforesaid, that only those cases observed for at least three months were taken into consideration. The results were classified as follows: "good," when the eyes were parallel with or without the glasses: "excellent," when in addition to the above, third degree fusion was obtained; "fair," when the residual convergence was not over 10° with the glasses; "poor," when the residual convergence was over 10°, and "bad," when divergence of over 10° developed.

In regards to the divergent cases, the results were considered "good" when the eyes were approximately parallel; "fair" when the residual divergence was only about 10°, and "poor" when very little correction was obtained by the operation. In this series were also included the secondary divergences, or those which followed overcorrection for convergence. The appended table gives the number of cases and the results.

TABLE 1—CONVERGENT SQUINTS

Operation	Total Number	Good	Excellent	Fair	Poor	Bad	Observation Less Than 3 Months
Complete Tenotomy	49	11 cases 22.5%		4 cases 8.16%	12 cases 24.5%	8 cases 16.32%	14
Recession	7	3 cases 43%		2 cases 28.5%		1 case atrophy bullu	1
Advancement	12	3 cases 25%		1 case 8.5%	4 cases 33.3%		4
Bishop Tucking	26	7 cases 27%		1 case 4%	8 cases 30%	3 cases 11.65%	7
Tenotomy & Advancement	6	1 case 16.66%			2 cases 33.3%	1 case 16.66%	2
Tenotomy & Bishop Tuck	83	13 cases 15.70%	4 cases 4.85%	9 cases 10.5%	6 cases 7.25%	17 cases 20.5%	34
Recession & Advancement	8	3 cases 37.5%		1 case 12.5%		2 cases 25%	3
Partial Tenotomy & Resection	13	7 cases 53.8%	1 case 7.75%	1 case 7.7%	2 cases 15.4%	1 case 7.7%	3
Guarded Tenotomy & Resection	4	3 cases 75%	1 case 25%			1 case 25%	
Partial Tenotomy & Tuck	3	2 cases 66.6%			1 case 33.3%		

TABLE 2—DIVERGENT SQUINTS

Operation	Number	Good	Fair	Poor
Complete Tenotomy	10	2 20%	2 20%	6 60%
Advancement	10	3 30%		7 70%
Tucking (Bishop)	8	3 37.5%	2 25%	3 37.5%
Tenotomy & Tucking (Bishop)	18	3 16.66%	2 22.2%	11 61.1%
Resection & Tenotomy	3	1 33.3%	1 33.3%	1 33.3%
Tenotomy & Advancement	3	1 33.3%	1 33.3%	1 33.3%
Resection & Partial Teonotomy	3	1 33.3%		2 66.66%

Comments. In scrutinizing the above figures, the percentage of good results may seem rather low, but there are a number of factors that may account for it. In the first place, a good many of the cases observed for less than a three month period were listed in the records as "good" and may, truly, have remained so at the end, but were not counted. In the second place, most of the operations were performed by the junior members of the staff and residents; for we have always considered the training of younger men for staff positions an important function of our department, and no better inducement can be offered them than some surgery, at least extraocular, under supervision. Again, some of the cases were reoperated on, and the final results were much better.

Some operative procedures which have only been performed a few times, such as partial tenotomies alone, resections, recessions and resections have been omitted from our tabulations. It is also to be noted that tenotomies, either complete or simple, have been abandoned by us to a

large extent since the early part of 1931, and that advancements and recessions have not been generally used since 1928, as we have had two cases resulting in endophthalmitis.

Fusion training was, unfortunately, not used at our clinic until recently, therefore no data of any significance are available at present. Attempts at accurate measurement of the amount of advancement or resection to correspond with the degree of deviation have not improved upon our results and were, therefore, not put into general use.

In regards to the anesthesia, most of the patients being of the school age, a general anesthetic was usually necessary, but a local was tried as often as possible. In a number of cases, gas anesthesia was used, the patient allowed to come out of the anesthetic, the condition of the eyes ascertained and, if not sufficiently corrected, the patient was put to sleep again and an operation on the antagonist muscle performed. This procedure seemed to be quite satisfactory.

Summary and Conclusions. Our experience and observations, in the author's opinion, justify the following conclusions:

1. Complete tenotomy, mild or "brutal," in convergent cases should be tabooed, as its results are uncertain and it leads, in a good many cases, to divergence. These findings are in keeping with the ideas of most experienced surgeons and writers on the subject, such as Peter,[10] Worth,[6] Wilkinson,[5] et al.

2. Partial tenotomy seems to be a harmless procedure as it cripples the muscle only temporarily, allowing the shortened antagonist to assume control of the position of the eyes. Alone it is of little value, but in combination with a tucking or resection of the antagonist, it offers a good prognosis.

3. Guarded tenotomy, while better than complete, is not as good as partial tenotomy, for the suture does not always hold, the tendon may slip and divergence result.

4. Recessions and classical advancements are not a safe procedure in the hands of the average surgeon, as it is difficult to anchor the muscle to sclera without piercing its entire thickness. The result is that either very little is accomplished, as the sutures pull out from the superficial sclera, or else, the coats of the eyeball are pierced and endophthalmitis may develop. Two such unfortunate results have occurred in our clinic. Therefore, only those who do extensive squint surgery and have perfected their technique may attempt these types of operations.

5. Tucking by the Briggs method cannot be highly recommended as the amount of folding into the ring is uncertain. Furthermore, as most of the cases operated on are young children, the difficult removal of the clamp often necessitates a second general anesthetic which, of course, is highly objectionable. The Bishop or Birch tucking is a much better surgical procedure and has given us fairly good results. However, the amount of correction accomplished by a tuck is uncertain as the catgut may readily pull through the muscle fibers before the shortening becomes permanent.

6. Resection by the Lancaster[9] method is highly recommended and has given us the best results. The correction is much greater than that of a tuck and the results obtained on the operating table are practically permanent. In small degrees of deviation it alone is sufficient to correct the deformity; in higher degrees it should be combined with a partial tenotomy of the interus and, if necessary, a resection of the externus of the fellow eye. A large number of resections have been performed since this paper was written with equally good results.

7. In general, there should be a tendency to slightly under-correct the convergent cases, leaving the residual convergence to be corrected by glasses and fusion training.

8. In divergent strabismus a complete tenotomy of the externus, either alone or in combination with resection or tucking of the internus, is usually indicated, depending, again, on the amount of deviation. There is no danger of complete tenotomy in these cases, and the tendency should always be to quite overcorrect the condition on the operating table.

9. Operation should be performed early in order to obtain single binocular vision and to eliminate amblyopia ex anopsia, as in older children and in adults the best that one can hope for is a good cosmetic result. Lay people as well as physicians should be informed of these facts and advised to start treatment of squints as early as possible.

10. The claims made by some surgeons that one can guage his operation in accordance with the degree of squint and duction power of the muscles involved, have not justified themselves in our experience. Some cases with high degree of deviation have responded favorably to a simple operation, while others, apparently similar cases in every respect, gave very poor results and had to be reoperated on. It seems, from our observations, that the last word on the treatment of strabismus has not been spoken yet, and that for the present our work is only approximate. However, as ophthalmology is keeping abreast with the advances in general medicine, we may hope in time to put squint surgery on a more accurate and scientific basis.

11. Finally, our work and the conclusions drawn from it should be regarded in the light of the average ophthalmic surgeon for whom these remarks are principally intended. Those of unusual skill and experience will follow their own choice and will, probably, obtain good results with any procedure.

Before closing, I wish to express my indebtedness to Dr. H. Beard, director of the clinic, for granting me the privilege of utilizing the material for this study. Also, to our nurse, Miss J. Craig, for her assistance in obtaining the records and attending to the correspondence with the patients.

25 E. Washington St.

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DISCUSSION

Dr. Hallard Beard, Chicago: There is one thing that stands out in this paper, and that is the fact that such a small proportion of this series of over 300 cases was among children under school age, and such a large proportion in children over 6. It seems that the proportion should be different. We should get them earlier. I think the fault lies, at least partly, with the general practitioner. I am making that accusation candidly, knowingly, because I have heard so many parents say they were advised to wait until the child was old enough to go to school, that they might outgrow it, overlooking the fact that the amblyopia that results when the child squints cannot be overcome after the eye has reached full development.

The practice in the dispensary at the University of Illinois has been to get the children as early as possible, and measure the amount of strabismus with and without glasses. Then we put them through the most careful routine refraction, using atropine, and if it seems that there is far-sightedness, the relief of which should diminish the amount of convergence, we order glasses and instruct the parents they should be worn constantly for three months and not more than six months before further observation be made. After that time, if the strabismus is not completely corrected, an operation is advised and insisted upon even though the correction is within ten per cent. of parallelism. When the parents refuse operation we have to dismiss the case. In regard to these surgical procedures, I can take issue with Dr. Folk on some minor points. I am in favor of tenotomies rather than recession operations, and I like to practice the so-called mild tenotomy in which one does not expose completely the tendon of insertion of the internal rectus. One tenotomises the muscle without exposing it and in so doing does not sever the ligaments which surround the muscles. The mild tenotomy is not a radical procedure which allows the muscle stump to retract through a period of years. The so-called secondary divergences which follow the "brutal" tenotomy and may occur even five or ten years after the operation do increase from year to year and are worse than the original convergence. Procedures such as recession operations in which sutures are put into the sclera are dangerous. I think that cannot be ignored. Jameson has invented a special needle for this purpose, penetrating the sclera at a point some distance back of the insertion of the internal rectus and suturing it in this position. The sclera is at its thinnest dimension at this point and I think you will find that trying to split one-half millimeter of sclera is a very difficult procedure. If the needle penetrates the entire thickness of the sclera, we are putting a suture through choroidal tissue which is dangerous and has led to loss of the eyeball through intra-ocular infection.

Dr. M. L. Folk, Chicago (closing): I have nothing to add to Dr. Beard's comment, except that in this series mild tenotomies did not bring good results. When cases are turned over to the internes they do not do it too mildly, that is why we prefer partial tenotomies.

About fusion: We have a muscle clinic now where we try to develop fusion. It requires too much time. One man must devote the entire clinic period to this work and is excused from the routine of the clinic. I think fusion training, if started early enough, together with proper refraction and cover treatment, will eliminate a good many strabismus operations, but so far we have not sufficient data on this point.

CERTAIN WIDESPREAD MISCONCEPTIONS CONCERNIG PREVENTABLE DISEASE*

L. N. JUDAH, M. D.
URBANA, ILL.

For a number of years biologists, sanitarians and physicians have been deploring the lack of accurate information of the public on matters pertaining to health and preventive medicine. The author has made an attempt to determine somewhat the extent of the deficiency of knowledge of hygiene essential for an individual to protect his own health and that of his family and for him to participate intelligently in movements for civic betterment. To this end, he submitted a questionnaire to a large group of recent high school graduates with rather interesting results.

High School Students Offer Suggestions as to Treatment. To the question, "What methods do you know for the treatment of warts?" the most common answer (27 per cent.) was the use of some form of acid. Electricity was advocated by 23 per cent., "burning off" by 10 per cent., surgery by 1 per cent., silver nitrate by 5 per cent., and iodine by 3 per cent.

Approximately 2 per cent. advised rubbing with a potato, a banana skin, hydrogen peroxide, corn cure, urine, salt water, or by the hand of one possessed of magic powers. Other measures recommended were tying a string around the base, biting out the wart, seeing a doctor, and simply leaving it alone.

Extraordinary answers included the following: "I had many seed warts on my hands a few years ago. An old gentleman rubbed them as he mumbled something to himself. In a month or so the warts disappeared." "The best way to cure them is by a careful diet." "Picking out the roots with a knife." "In the early stages the wart may be removed by a physician." Over one-fifth made no attempt to answer the question.

To another question, "What should parents know about diet if children are to have good teeth?" 30 per cent. either gave no answer or merely stated that the parents should know what to feed the child; 29 per cent. suggested a diet rich in minerals, some mentioning calcium, while 8 per cent. believed that eating sweets caused decay of the teeth! 1 per cent. advocated a diet rich in carbohydrates; 2 per cent. recommended much protein; and one man felt that a high fat diet would be helpful. Of the total, 8 per cent. mentioned the necessity for foods which will exercise the teeth and gums. Only 4 per cent. of the answers included vegetables and only 8 per cent. milk. Just 2 per cent. advised the use of milk or vegetables plus cod liver oil and no one called attention to the value of sunlight. Two students suggested prenatal care. Acid and alkaline foods were both recommended and condemned. The inclusion of all the vitamines in the diet was suggested by 6 per cent. and each one was mentioned at least once.

The most common answer to the question, "What are the causes of constipation?" was that improper diet was the cause, without giving details. This occurred in 66 per cent. of the answers. Over-eating was given in one-fourth and too much or too little exercise in one-fifth of the answers. Lack of habit was mentioned in 13 per cent. The need for vegetables and fruits was advised in six per cent. and roughage in 4 per cent. Psychic causes were suggested in 8 per cent., irregular meals in 24 per cent., and eating too fast in 17 per cent. Some remarkable answers were: "The pancreas is over-worked." "Your kidneys do not throw enough water into your stomach." "Constipation is a condition of the stomach". Very few gave any complete picture of the causes of constipation.

High school graduates, in discussing the cause and prevention of simple goiter showed clearly that they had been reached by advertising. About 11 per cent. gave answers such as the following: "Do not come in contact with people who have a small goiter." "Too much salt causes goiter." "Wearing a tight neckpiece." "External compresses and swabbing may prevent . . . its growth." "Straining of the cords in the throat." "Medicine in the form of pills will correct goiter." "Goiter is caused by a germ found in water and in meat." "Using voice too much." "Drink plenty of water," or "Paint throat with iodine."

One-half (49 per cent.) apparently faced the question with a blank stare. About 40 per cent. mentioned iodine internally, and approximately one-half in the form of iodized salt.

Among the question asked was, "Why do we need inorganic salts (minerals) in our diet?"

*Read before Section on Public Health & Hygiene, Illinois State Medical Society, Peoria, May 17, 1933.

The word "minerals" was used to insure that the examinee would understand the question, but either the attempt at clarity failed or else this subject has been gravely neglected. Almost one-half (42 per cent.) avoided this question for one more easily answered or gave an answer so far from correct as to make classification impossible. About 46 per cent. stated that minerals aided in building the bones and teeth. Other uses attributed to them were: digestive aids, 6 per cent.; improves the blood in various ways, 13 per cent.; balanced diet, 4 per cent.

Apparently only about one-half of our high school graduates know that inorganic salts are useful for building bone and teeth, and few know any other uses for them.

On the Control of Communicable Disease. "Should parents allow their children to have the so-called 'childhood diseases' before puberty? Why?" This question brings out one of our oldest superstitions. Of those answering, 43 per cent. declared that children should be guarded if possible, 33 per cent. felt that it was wise to allow children to contract these diseases, and 24 per cent were undecided or did not attempt to answer. In addition, one-third (38 per cent.) of the students answering in the negative expressed absurd ideas. Thus, nearly three-fourths (73 per cent.) of our leaders of tomorrow are unprepared to function as responsible citizens, while one-fourth (27 per cent) have the necessary knowledge to perform properly their duties to their families and to their communities.

Of those answering this question in the affirmative, 51 per cent. gave as the reason that childhood diseases are less dangerous before puberty and 22 per cent. that a permanent immunity is thus received. Answers in the negative included only 46 per cent., who suggested the risk of death or the impairment of the function of some part of the body. Only 1 per cent. mentioned the danger of spreading the disease, while 7 per cent. cleverly evaded the question by stating that it is always best to avoid any disease.

Some very interesting viewpoints developed were: "As far as I know, these childhood diseases are not harmful to the body." "We might catch them when we get older and be kept in out of work," or "There is no way in which these diseases can be stopped."

"Why should be examine all food handlers? Be specific in your answer." The question seemed to present no great problem because only 2 per cent. failed to answer it. Approximately 82 per cent., however, failed to be specific, simply stating that disease or that germs might be transmitted. Only 10 per cent. advanced the theory that typhoid fever could be spread in this manner. Diphtheria was mentioned by only 1 per cent., tuberculosis and syphilis by 2 per cent.

"How may the community and the individual aid in preventing the spread of typhoid fever?" In reply to this, 56 per cent. mentioned the protection of water supplies;about one-half of these mentioned no other method. Only 40 per cent. advised inoculation, and of these one-third mentioned no other measure of protection. Flies seem to have lost their bad reputation, as only 2 per cent. considered them a source of danger, while four times as many students made the mosquito a typhoid carrier. Clean or unadulterated food was given as a means to prevent this disease by 11 per cent. and 13 per cent. felt that some form of quarantine was desirable. Only 3 per cent. mentioned the danger of carriers and very few high school graduates classified men in this category.

"What can the individual and the community do to prevent the spread of diphtheria?" In answering this question, 44 per cent. showed a knowledge of preventive inoculations, while 62 per cent. advised quarantine. Less than 1 per cent. mentioned the Schick test, proper sewage disposal was recommended by one-fourth, and a pure water supply by one-eighth.

Two questions were asked concerning the role of milk in the transmission of disease.

"Should we drink pasteurized milk exclusively? Why?" In answer to this question, 31 per cent. stated that pasteurized milk contained no bacteria and 25 per cent. that all *disease* germs were killed or that all danger of disease was prevented. Of those examined, 3 per cent. mentioned that disease might come from the cows, but only 1 per cent. considered human carriers. Typhoid or tuberculosis or both were considered by 12 per cent. and 3 per cent. felt that pasteurization would remove dirt. About 1 per cent opposed pasteurization and an equal number felt that pasteurized milk should be used only by infants and convalescents.

Other striking answers were that "pasteuriza-

tion kills bacteria temporarily," "destroys the good germs," "removes vitamine D," "pasteurization gives milk proper strength," or "removes protein."

The students were also questioned as to the diseases spread by milk. About 15 per cent. knew none, about one-half of the answers mentioned typhoid fever, and an equal number tuberculosis. One-fourth mentioned diphtheria, and one-tenth scarlet fever. Others mentioned included: smallpox, 6 per cent.; chickenpox, 4 per cent; undulant fever, 3 per cent. The average number of diseases listed was only 1.6 per answer.

The question, "What would you do if bitten by a dog?" was productive of much information, as only 4 per cent. failed to answer it. About one-third (39 per cent.) would examine the dog in some fashion. Of this 39 per cent. only one-sixth would recommend confining the dog for observation and about one-half advised immediate killing of the animal. Of the total number, 16 per cent. suggested treatment for hydrophobia, while 7 per cent. considered tetanus antitoxin to be indicated.

Some answers were most original. For example: "Keep cool and *think*." "You can tell in a minute if it is a mad dog." "Be careful about the diet and about staying away from other people." "Remain quiet." Have and x-ray taken of the wound." "Take something into the stomach . . . to counter-act the disease." "Keep under care of a surgeon until out of danger. Then have the dog shot." Let the owner know about it." "Rabies may be prevented by the careful supervision of dogs during 'dog week.' This period usually comes in a very hot spell late in July and early in August. The very hot days are a great trial for a dog. Communities usually have some provision for these Trial Days."

New Light on Sanitation. To ascertain current knowledge of sanitation, the following question was asked, "How may a town of 500,000 people located on a small river safely dispose of its sewage?" Very few of the answers showed any concern for the people downstream. Thirty-eight per cent. made no mention of sewage treatment plants and of the remainder only 12 per cent. gave any information which could possibly be interpreted as being indicative of knowledge of modern sewage treatment of any type. Suggections included: "Enlarging the river," "Burying the sewage," "Burning it," "Running it into a field south of town," "Add chlorine to it," or several thought "The river could be piped down to the mouth and out into the lake or sea for a safe distance."

In complying with the request to "list several diseases which may be transmitted by water, one-fifth of the high school graduates made no attempt to answer and only 72 per cent. mentioned typhoid fever. Other diseases mentioned were: diphtheria, 27 per cent per cent; malaria, ten per cent; tuberculosis, 9 per cent; and scarlet fever, 5 per cent. The average number of diseases listed was only 1.4 per answer.

The Results of Education by Advertising. As Vitamine C has been well-advertised commercially, students were requested to "list several foods rich in Vitamine C." The answers given were: milk, 25 per cent.; eggs, 15 per cent.; bread and spinach, 8 per cent.; tomatoes and "greens," 7 per cent.; potatoes and cheese, 6 per cent.; oranges, 5 per cent.; and grapefruit, 1 per cent. It is remarkable that neither the radio nor the press seems to have popularized the citrous fruits as a source of vitamine. All types of foods were suggested from candy to yeast. About 46 per cent. made no attempt to answer the question.

The students were also asked, "Of what value is direct sunlight to the human body?" This is another question calling for information which has been industriously exploited by commercial advertisers and by professional men alike. Notwithstanding this fact, 9 per cent. wrote no answer and one-fifth merely gave general answers indicative of a vague knowledge of the subject. Only 12 per cent. associated sunlight with vitamines and 3 per cent. specified vitamine D. Nearly one-fifth said that sunlight contains ultraviolet rays and one-seventh that it is a germicide. Just 7 per cent. stated that sunlight had an effect upon the bones.

On Seeking Medical Advice. To the question, "If you moved into a strange town, how would you choose a family physician?", the answers were not such as to encourage a medical student to abandon the pursuit of the social graces for scientific medicine. A large number (36 per cent.) of high school graduates would choose

their physician on recommendation of their neighbors, lodge brethren, fellow luncheon club members, and the like, while only 5 per cent. would consider his training. At least 2 per cent. would call on various physicians, look them over, and endeavor to draw their own conclusions. About 5 per cent. would make cleanliness a factor, and 8 per cent. would consult the board of health of a hospital.

Other factors which were deemed worthy of consideration were youth, extreme age, maturity, moderate fees, sympathy, partnership in a clinic, membership on a hospital staff, type of office, class of patients, honesty, and the bulk of the physician. Interesting reasons given for choosing a physician were: a fairly good reputation, not too snappy and efficient, telephone directory listing, feeling for his patient, intelligent look, the highest in price is usually the best, advertisements of a good newspaper, financial standing, asking a head nurse a banker or a preacher.

Conclusion. Sampling of the medical hygienic, and sanitary knowledge of high school graduates sets forth in bold relief the teaching of the allegory given by Chapman and Counts in their great book on the "Principles of Education":

"Greeting his pupils, the master asked, 'What would you learn of me?' and the reply came:

'How shall we care for our bodies?
'How shall we rear our children?
'How shall we work together?
'How shall we live with our fellowmen?
'For what ends shall we live?'

"And the teacher pondered these words, and sorrow was in his heart, for his own learning touched not these things."

DISCUSSION

W. W. Bauer, Chicago: Dr. Judah's able and interesting paper exposes in definite terms what is known in a more or less indefinite way to every practicing physician, namely, that the public does not know much about health, and that much of what it does know, is not so. The only excuse for adding anything to the presentation you have just heard is that Dr. Judah sent his questionnaire to recent high school graduates, while I happen to be in a position to supplement his remarks with selections from a wider and entirely unselected field.

The questions sent to *Hygeia* for reply come from all sorts of people in every corner of the United States, and a few from abroad. They numbered roughly 3,500 letters in 1932, posing a little more than 4,200 different questions on 220-odd subjects. I have picked just a few to show you that Dr. Judah's conclusions will hold good among practically all classes of our lay people.

Before I read these, let me assure you, that like Ripley, I can prove every one of them by the original —believe it or not.

"I inquire . . . whether it is a fact that breathing through the right nostril tends to a dominant, positive and aggressive disposition while breathing through the left nostril makes for a submissive and negative disposition."

And from the same letter, this: "Whether sleeping in a North to South position is preferable to any other. And if the breathing exercises as practiced by the Yogi are 'bunk' or founded on fact and really beneficial."

Here is a comment from a perplexed mother: "I have 2 babies & I do not know the functions and the parts or the organs of a woman, so it is about time I did."

A letter from one who evidently regards himself as intelligent, has this to say: "I was formerly an alderman in this city, but turned the job over to my brother who is decidedly slim . . . My trouble is that my belly is too darn big and I would like to know whether or not the men's corsets that we see advertised are any good . . ."

A gullible fiction reader wishes to know if any of the following "scientific discoveries," which are supposed to put an end to male dominance, are correct:

(a) female hormone stimulation which will make a woman do as much in one hour as a man can do in three;

(b) female hormone stimulation which extends the average span of a woman's life to 150 years;

(c) the operation by which the embryo is removed at three months and bathed in a nutrient fluid to attain a "size and vigor impossible by the old-fashioned method."

Another inquirer writes: "Recently I heard that a tea made of wild peach leaves (boiled) will cause a fine growth of hair if used regularly."

Here is a letter that is hard to answer: "I have perfected a eye water that will remoove cataract in a few days, Improove weak eyes in majority of cases, so there's will be no need of glasses. What would be the best way to get this to the public. Can I put protection on my formula? so other's caanot analize it and sell it."

The marvels of science impress certain persons unduly, as witness this: "Has human blood ever been drained from the veins of the aged completely, and their veins filled with the blood of youth as an experiment to prolong their life? Has his method ever been used as a last resort in the treatment of germ laden blood? Has blood ever been treated externally disease germs destroyed in various ways known to medical science and the purified blood returned again to the veins. Could this be done in an absolute vacuum chamber with surgeons, attendants, etc., wearing oxygen masks? Would it not be a good idea to perform all major operations in such a chamber, so that the germs in the air

could not contaminate exposed vital organs of the patient or the blood? If mercury is deadly to syphilitic germs could not the blood be passed through a vacuum tube containing mercury in an external manner and returned to the veins again a continual flow being prolonged until syphilitic germs in the blood were annihilated . . ." There is more of the same. A little knowledge!

From the sublime to the ridiculous, and here we are: "Please discuss in detail the question as to whether the contour of a head will determine to a marked degree the traits, character, and abilities of the persons concerned."

Here are a few selected at random from a number of letters:

"Will asafoetida, tied around your neck, prevent disease?" That's an old friend, and he's far from dead yet!

"Will a buckskin tied around our neck prevent disease?" These two came from a school teacher!

The old superstition about menstruating nurses in operating rooms crops up in the form of a question as to whether fruit canned while the housewife is menstruating, will spoil. "Will aluminum cooking utensils cause cancer?" is asked regularly. An arthritic inquires about the virtue resident in the wearing of copper wires about the wrists and ankles for rheumatism. A correspondent asks about offers to cure rheumatism by adjusting the bones of the feet, which is not as crazy as it sounds, when one remembers that a quack in Canada has made a fat fortune out of this, coupled with stock in a shoe factory. Still another correspondent has heard through a foreign newspaper that in Czecho-Slovakia they are keeping people from growing old by the use of alpha, beta and gamma rays, and she wants to know if there's anything in it.

A physician publishes experiments in restoring bald pates to their pristine splendor, a lay magazine picks up the story, and despite his disclaimers that his experiments are not ready for universal application, the mail is deluged with queries. A magazine article refers to a cod liver oil concentrate, the first on the market, and ten thousand letters are written over a period of five years, wanting to know about it. Many women write about skin foods and developing creams. The public wants to know! Dr. Judah noted the significant fact that they had not apparently absorbed the information offered in advertising of citrus fruits, about vitamins. Readers, like other human beings, believe only what they want to believe.

The well known fact that round worms in children are occasionally known to emerge through the mouth caused one correspondent to inquire if *tapeworms* could "really" be coaxed out that way by holding a tablespoon of warm milk in front of the patient's mouth. This fallacy, like so many others, is based on a germ of truth. The inquiry was sent by a teacher who did not believe the tale, but could not stamp it out of the school in which she taught, so she appealed to *Hygeia* for support.

These are but a few of the outstanding popular fallacies, and I will admit, were selected somewhat with the lateness of the hour in mind, and the suspicion that a bit of comedy would not come amiss. There are, however, in our files, thousands of letters, not only in the Bureau of Health and Public Instruction, but in the other offices, which show beyond a doubt that the lay public understands little or nothing about health. Upon that lack of understanding is based, in my judgment, much of the misunderstanding of physicians and of medical practice which makes the practice of the healing art so difficult today, and opens the doors to fakers of all kinds, medical and economic, who are ready to offer a gullible, uninformed, misinformed public the pot of gold at the end of the rainbow.

The answer, of course, lies in tha grievously abused word, "education." The medical profession must take and hold the lead in educating the people for better health.

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular meeting, Wednesday, February 14, 1934, Programme: The General Trend of Medical Education and Practice. Education, Walter L. Bierring, President-elect American Medical Association; Practice, Charles B. Wright, Assoc. Prof. Medicine, Univ. of Minn. Medical School; Discussion, Dean D. Lewis, President American Medical Association.

Regular meeting, Wednesday, February 28, 1934. Programme: The Diabetic of the Future and His Problems. Elliott P. Joslin, Clinical Professor of Medicine, Harvard University Medical School; Discussion—Rollin T. Woodyatt, Clinical Professor of Medicine, Rush Medical College.

OGLE COUNTY

Ogle County Medical Society held its Winter Meeting at Polo, Illinois, January 31, 1934. In an afternoon meeting the Society was honored by Dr. Gilbert Fitz Patrick, Chairman Illinois Cancer Committee. The Public was invited, and the meeting was well attended.

After dinner at the Masonic temple a short business meeting was held and communications from our State Secretary were read.

Approval was voted on the State program and an advisory committee appointed. Dr. W. E. Kittler, Rochelle; Dr. L. M. Griffen, Polo; Dr. J. S. Moffatt, Byron; Dr. A. R. Bogue, Rochelle, Secretary.

A motion passed to approve the action of the President and Secretary in signing up waivers in the closed First National Bank in Rochelle.

Dr. Gilbert Fitz Patrick gave a scientific review of the afternoon lecture.

Dr. W. L. Karcher, Freeport, gave a very interesting talk on the prostate and the trans-urethral operation. A good discussion with questions followed with interesting points impressed.

Marriages

Harold M. Camp to Miss Doris Holt, both of Monmouth, Ill., January 28.

Sheldon Wilson Reagan to Miss Maryan Bryan, both of Elgin, Ill., January 20.

Personals

Dr. C. A. Aldrich spoke on "Nephritis in Children" at the February 21 meeting of Will-Grundy County Medical Society.

Dr. Elmer Kenyon addressed the Parent Teacher Association of the Roosevelt School of River Forest, February 20, on "Speech Defects in Children."

Dr. R. K. Packard gave a talk on Medical Economics before the Fulton County Medical Society, February 21.

Dr. Bernard Portis read a paper before the St. Bernard Research Society entitled, "The Surgical Treatment of Duodenal Ileus," February 13, 1934.

Dr. Frederick B. Balmer addressed The Norwegian American Hospital Staff, February 19, on "Medical Economics Essential to the Worthwhile Practice of Medicine."

Dr. Joseph L. Baer addressed Elkhart County Medical Association February 8, on "Normal Obstetrics in General Practice."

Dr. Jean R. Oliver, Professor of Pathology, Long Island College of Medicine, delivered the Tenth Ludvig Hektoen Lecture of the Frank Billings Foundation of the Institute of Medicine of Chicago on Friday evening, February 23, on "The Problem of Architectonics in Terminal Bright's Disease."

Dr. Arthur J. Cramp gave an illustrated lecture February 15 before the members of the Kane County Home Bureau at their annual winter picnic at Geneva.

Dr. Clayton J. Lundy addressed a public meeting at Central Y. M. C. A., February 16, on "Blood Pressure and Health."

Dr. Frank F. Maple gave a talk on "Sterility in the Female" at the February meeting of Will-Grundy County Medical Society.

Dr. Eugene F. Traut addressed the medical meeting sponsored by the Paris Hospital, Paris, Illinois, February 15, on "Arthritis."

Dr. Bertha VanHoosen addressed the Woman's Club of the Peoples Church, Chicago, February 12.

Dr. Herman L. Kretschmer, Chicago, gave a paper before the Peoria City Medical Society, January 16, on "Modern Treatment of Prostatic Obstruction."

Dr. Robert H. Woodruff was among the speakers before the Sangamon County Medical Society in Springfield, January 4, on "The Doctor and Vital Statistics."

Dr. Thomas B. Knox, Quincy, addressed the Madison County Medical Society, Edwardsville, January 9, on "The Doctor in the Medical Care of the Unemployed."

Dr. Hilmer William Elghammer addressed the Chicago Pediatric Society, February 20, among others, on "Erythrocyte Sedimentation Rate in Rheumatic Infection."

The Chicago Society of Allergy was addressed, February 19, among others, by Dr. Milton B. Cohen, Cleveland, on "The Mechanism of the Asthmatic Attack in Allergic Asthma."

Dr. Max Thorek addressed the Kankakee County Medical Society, February 8, on "The Treatment of Carcinoma of the Rectum by Electrosurgery."

Dr. Eugene J. Chesrow was decorated with the Order of the Crown of Italy, December 21, "in recognition of his benevolent and charitable work among the Italians" of the city.

At a meeting of the Chicago Urological Society, February 21, the speakers included Dr. John Talbot Gernon on "A New Antigen in the Treatment of Gonorrhea."

At a meeting of the Chicago Council of Medical Women, February 2, Drs. Marie Wessels spoke on "A Social Problem of Gynecology and Obstetrics," and Mary G. Schroeder, "The Relation of Insanity to Birth Control."

"The Emotional Difficulties of Unemployed Women" was the subject discussed at a meeting sponsored by the Illinois Society for Mental Hygiene, February 16, by Dr. David B. Rotman, Dr. Douglas G. Campbell and Ruth O. Potter, social worker.

Speakers before the LaSalle County Medical Society in Streator, January 18, were Drs. Carl B. Davis and Frederick H. Falls, Chicago, on

"Anatomy, Symptoms and Treatment of Cervical Rib" and "Premature Detachment of the Normally Implanted Placenta," respectively.

Dr. Scott J. Wilkinson of Decatur, Illinois, addressed the Christian County Medical Society on January 7, at Taylorville, Ill., on "Emergencies in Pediatric Practice."

Dr. Jean R. Oliver, professor of pathology, Long Island College of Medicine, delivered the tenth Ludvig Hektoen Lecture of the Frank Billings Foundation, February 23, on "The Problem of Architectonics in Terminal Bright's Disease."

Major General Robert U. Patterson, surgeon general of the U. S. Army, Washington, D. C., will be the speaker at the annual dinner of the medical chapter, Reserve Officers' Association, at the Army and Navy Club, March 5. Dr. Patterson will discuss the "Reserve Officers' Corps of the U. S. Army."

The Chicago Surgical Society was addressed, February 2, among others, by Drs. Edward Starr Judd, Rochester, Minn., and Dean Lewis, Baltimore, on "Present Status of the Surgical Treatment of Peptic Ulcer" and "Chronic Cystic Mastitis and Its Relation to Ovarian Hormones," respectively.

Speakers before the Chicago Gynecological Society, February 16, were Drs. Henry Schmitz, on "Treatment of the Bleeding Uterus Due to Benign Lesions with Radium and Roentgen Rays"; William C. Danforth, Evanston, Ill., "Treatment of Fibroids; Report of a Series of 443 Cases," and David S. Hillis, "Fibroids in Pregnancy."

At a meeting of the Stephenson County Medical Society in Freeport, February 12, the speakers were Drs. Harold S. Diehl, Minneapolis, and Hugh Cabot, Rochester, Minn., on "The Common Cold" and "An Historical Survey of the Development of Operations for Prostate Obstruction," respectively.

Dr. Albert C. Baxter, Springfield, was recently presented with a silver beaver, emblem of noteworthy service in scouting, by the Abraham Lincoln Council of the Boy Scouts of America. The silver beaver is the highest award in boy scout work and is granted only by the National Council of Boy Scouts of America. Dr. Baxter has been identified with the scout movement since its inception in central Illinois.

News Notes

—Examples of laymen writing medical articles for the instruction (?) of the public are the "Microbe Burner" by Paul de Kruif in the *Country Gentleman* of November, 1933, and "Forward from Polio" by the same writer in *Ladies Home Journal* of February, 1934.

—Contract has been let for the construction of twenty-one buildings at the Manteno State Hospital at an estimated cost of $1,161,608. The new buildings will add 1,700 beds to the capacity of the hospital, it was reported.

—The Livingston County Medical Society held a meeting January 25, 1934, at the Phoenix hotel in Pontiac. Speakers of the evening were Drs. A. B. Middleton, of Pontiac, and Mark Jampolis, pediatrician of Chicago.

—The clinical problems of dentistry and medicine will be treated in sessions on medical relations at the annual midwinter meeting of the Chicago Dental Society in the Stevens Hotel, February 27-March 1. Participating in this phase of the program will be:

Dr. Harry A. Singer, Diseases of the Stomach.

Dr. Richard H. Jaffe, Leukemias.

Drs. Lewis J. Pollock and Harry A. Paskind, Neurology.

Dr. Hayes E. Martin, New York, Differential Diagnosis of Benign and Malignant Tumors of the Oral Cavity.

Dr. James Persons Simonds and Carroll W. Stuart, D.D.S., Malignant Tumors of the Head and Neck.

Drs. Harry E. Mock, Frederick W. Merrifield and Edward L. Jenkinson, Traumatic Injuries of the Head and Neck.

Drs. Francis E. Senear, Edward A. Oliver and Joseph E. Schaefer, Dermatology and Diseases of the Head and Mouth.

While these problems will be discussed from the medical aspect, the contingent dental relationship will also be considered.

—There were 171,638 tests made for all diseases in the diagnostic laboratories of the state department of public health in 1933 as compared with 162,325 in 1932. Of these, 25,856 were positive in 1933 and 24,727 in 1932. The num-

ber of specimens examined for tuberculosis totaled 17,395 last year as compared with a previous figure of 15,033, and the proportion of positive tests increased from 15 to 17 per cent. More specimens were examined for diphtheria and typhoid in proportion to cases reported than ever before, but the percentage found positive was lower. Tests of animal heads for rabies went up from 505 in 1932 to 611 last year, and the proportions found positive were 35 and 45 per cent, respectively. Of the 99,352 specimens examined for syphilis, 17,630 were positive, an increase of 2,697 in the number of tests made for this disease.

—Dr. Joseph Colt Bloodgood, clinical professor of surgery, Johns Hopkins University School of Medicine, Baltimore, was the guest speaker at Veterans' Administration Facility, Hines, January 23, at a tumor clinic. His subject was "The Evolution of the Treatment of Cancer as I Have Observed It." Other speakers included:

Dr. Max Cutler, Chicago, Indications and Limitations of Radium in the Treatment of Cancer.

Dr. Paul F. Brown, Hines, Operability and Inoperability of Tumors.

Dr. Linnaeus H. Prince, Hines, Clinical Laboratory and Autopsy Activities, 1933.

Dr. John W. Turner, Hines, Organization of Tumor Clinic.

S. E. Owen, Ph.D., Chicago, Biological Diagnosis of Teratoma.

Dr. Gilbert Fitz-Patrick, Chicago, showed the Canti Cancer Film, and Dr. Thomas Hugh Scott, manager of the facility, introduced the speakers.

—The Merck Institute of Therapeutic Research, Rahway, New Jersey, announces the appointment of Dr. Eugene Maier as Chief Bacteriologist. Dr. Maier is a graduate of the University of Tuebingen, Wuertemberg, Germany, and completed his studies at the University of Erlangen, Germany. Dr. Maier was associated with the Rockefeller Institute of New York as Research Assistant from 1926 to 1930. Since 1931, up to the time of becoming associated with Merck & Co., Inc., Dr. Maier has been at Bellevue Hospital, New York, in the department of pathology, as bacteriologist for the Tuberculosis Division of Columbia University.

Deaths

WILLIAM JOSEPH BOWES, Chicago; University of Colorado School of Medicine, Denver, 1919; aged 40; died, February 1, of diabetes mellitus.

H. EUGENE DELAVERGNE, Kankakee, Ill.; Keokuk (Iowa) Medical College, 1896; aged 72; died, Dec. 26, 1933, of coronary disease.

LEROY CLARKE HEDGES, Chicago; Chicago Homeopathic Medical College, 1890; past president of the Colorado State Medical Society and formerly member of the state board of medical examiners; aged 74; died, January 17, of cerebral hemorrhage.

ISAAC KAUFMAN, Chicago; Chicago College of Medicine and Surgery, 1915; aged 51; on the staff of the Woodlawn Hospital, where he died, February 6, following an operation for gallbladder disease.

ZANVILL DAVID KLOPPER, Chicago; Jenner Medical College, Chicago, 1908; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; formerly coroner's physician; on the staff of St. Elizabeth's Hospital; aged 62; died, February 3, of cerebral hemorrhage.

JAMES T. MARLOW, Tamaroa, Ill.; Missouri Medical College, St. Louis, 1886; a Fellow, A. M. A.; aged 74; died, January 12, of coronary embolism.

HENRY EVERETT MONROE, Shelbyville, Ill.; Medical College of Ohio, Cincinnati, 1899; a Fellow A. M. A.; past president of the Shelby County Medical Society; served during the World War; aged 58; on the staff of the Shelby County Memorial Hospital, where he died, January 30, of acute dilatation of the heart.

WALTER SPAULDING MIX, Beardstown, Ill.; University of Illinois College of Medicine, Chicago, 1915; a Fellow, A. M. A.; member of the Colorado State Medical Society; served during the World War; formerly on the staff of the Agnes Memorial Sanatorium, Denver; aged 42; died, January 6, in Virginia, Ill., of pulmonary tuberculosis.

JAMES J. MORONY, Breese, Ill.; Marion-Sims College of Medicine, St. Louis, 1895; a Fellow, A. M. A.; past president of the Clinton County Medical Society; for many years county coroner; aged 68; on the staff of St. Joseph Hospital, where he died, January 4, of arteriosclerosis and secondary anemia.

CHARLES A. C. PARKER, Dongola, Ill.; Marion-Sims College of Medicine, St. Louis, 1892; member of the Illinois State Medical Society; formerly member of the school board and mayor of Dongola; aged 70; died, Nov. 26, 1933.

CHARLES WAKEFORD, Norris City, Ill.; Missouri College, St. Louis, 1897; served during the World War; aged 57; died, January 17, of septicemia and erysipelas.

SAMUEL MADISON WATSON, Alton, Ill. (licensed, Illinois, 1888); aged 88; died, Nov. 24, 1933, of hepatic carcinoma.

JOSEPH THEODORE WOODWARD, East Moline, Ill.; Medical College of Indiana, Indianapolis, 1894; served during the World War; on the staff of the East Moline State Hospital; aged 63; died, Dec. 24, 1933, in Peoria, of coronary thrombosis.